Office of the Assistant Secretary of Defense

(Energy, Installations, and Environment)

Department of Defense

Annual Energy Management Report

Fiscal Year 2015

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COST ESTIMATE
The estimated cost of this report for the Department of Defense is approximately $314,000 in Fiscal Years 2015–2016. This includes $246,000 in expenses and $68,000 in DoD labor. Cost estimate generated on March 30, 2016 / RefID: 3-4DBD001

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1. Introduction

The Department of Defense energy program's chief priority is supporting the ability to carry out the mission. Both at installations and in combat platforms, energy is a critical and vulnerable resource across the full range of military operations. Energy availability and resilience define the capabilities of weapons platforms, facilities, and equipment, while remaining a substantial expense that competes with other investments in both manpower and equipment. These issues compel DoD to pursue cost-effective measures that increase energy performance and reduce our cost of operations.

At its core, DoD's energy program integrates three pillars (Figure 1-1):

- Expand Supply
- Reduce Demand
- Adapt Future Forces and Technology

Figure 1-1: Defense Energy Approach

DoD's fixed installations are critical components of our ability to fight and win wars, accounting for nearly 30 percent of DoD's total energy use. Our Warfighters cannot do their jobs without bases from which to fight, train, or live when they are not deployed. Simply put, installations support and ensure our military readiness.

An important opportunity for the Department to improve its energy resilience exists on its fixed installations as the Department manages over 500 installations worldwide, comprising nearly 300,000 buildings. The keys to transforming installation energy are investments in energy-efficient facilities and cost-effective energy sources for those facilities—including alternative energy sources—as well as the promotion of non-materiel and behavior-based solutions. Through such initiatives, the Department can help ensure the energy resilience and reliability of a large percentage of the energy it manages and treat installation energy as a force multiplier in the support of military readiness.

Augmenting these principles, comprehensive measurement of installation energy helps the Department maintain an aggressive pace toward its larger energy objectives. To that end, this Annual Energy Management Report (AEMR) details the Department's FY 2015 performance toward its objectives of energy supply expansion, energy efficiency and demand reduction, and the adaption of future forces and advanced technologies on fixed installations. It also details its activities addressing climate change impacts to its energy portfolio, including enhancing energy resilience.

DoD reports on its installation energy performance in the FY 2015 AEMR.[1] Table 1-1 summarizes the Department's progress toward its FY 2015 energy goals, while Appendix D presents the Department's energy-related performance metrics in greater detail. As shown, although DoD fell short of its FY 2015 goals for energy intensity reduction and renewable energy, it far exceeded its goals for potable water intensity and petroleum consumption reduction.

Table 1-1: FY 2015 DoD Progress Toward Installation Energy and Water Goals[2]

Goals & Objectives	Metric	Component	FY15	Goal (FY15)
Reduce Facility Energy Intensity Relative To FY03 Baseline (EISA 2007)	British Thermal Unit (Btu) of energy consumed per gross square foot of facility space.	DoD	-19.9%	-30%
		USAF	-24.3%	
		Army	-18.0%	
		Navy	-21.5%	
		USMC	-20.2%	
Consume More Electric Energy From Renewable Sources (EPACT 2005)	Total renewable electricity consumption as a percentage of total facility electricity consumption.	DoD	3.6%	7.5%
		USAF	6.2%	
		Army	1.8%	
		Navy	1.9%	
		USMC	9.5%	
Produce Or Procure More Energy From Renewable Sources (10 U.S.C. §2911e)	Total renewable enegy (electric & non-electric) produced or consumed as a percentage of total facility energy consumption.	DoD	12.4%	25% by 2025
		USAF	6.9%	
		Army	12.0%	
		Navy	25.9%	
		USMC	5.0%	
Reduce Potable Water Intensity Relative To FY07 Baseline (EO 13423)	Gallons of water used per square foot of facility space.	DoD	-22.3%	-16%
		USAF	-23.4%	
		Army	-26.5%	
		Navy	-12.2%	
		USMC	-31.1%	
Reduce Petroleum Consumption In Non-Tactical Vehicles Relative To FY05 Baseline (EISA 2007, EO 13514)	Gallons of gasoline equivalent of petroleum fuel consumed.	DoD	-33.6%	-20%
		USAF	-14.7%	
		Army	-41.1%	
		Navy	-25.1%	
		USMC	-42.9%	

[1] This report includes the installation energy activities of the Air Force, Army, Navy, and Marine Corps, and the following Defense Agencies: Defense Contract Management Agency (DCMA); Defense Commissary Agency (DeCA); Defense Finance and Accounting Service (DFAS); Defense Intelligence Agency (DIA); Defense Logistics Agency (DLA); Missile Defense Agency (MDA); National Geospatial-Intelligence Agency (NGA); National Reconnaissance Office (NRO); National Security Agency (NSA); and Washington Headquarters Services (WHS).

[2] Energy Independence and Security Act of 2007 (EISA), Energy Policy Act of 2005 (EPAct), United States Code (U.S.C.), and Executive Order (EO).

The FY 2015 AEMR is compiled based upon the following mandates (Appendix B):

- Section 548 of the National Energy Conservation Policy Act (NECPA) of 1978 (title 42, United States Code, section 8258 [42 U.S.C. §8258]), which requires Federal agencies to describe their energy management activities;
- 10 U.S.C. §2924, which requires DoD to submit to Congress an AEMR describing its installation energy activities; and
- 10 U.S.C. §2911, which requires DoD to establish energy performance goals for transportation systems, support systems, utilities, and infrastructure and facilities.

DoD distinguishes installation energy from operational energy. Whereas installation energy includes energy needed to power fixed installations and enduring locations as well as non-tactical vehicles (NTVs), operational energy is the energy required for training, moving, and sustaining military forces and weapons platforms for military operations—including energy used by tactical power systems and generators at non-enduring locations.

The remainder of this report discusses DoD's efforts related to managing its installation energy program, reducing energy demand, increasing the supply of renewable energy, enhancing energy resilience, managing energy data and metering, funding energy projects, and reporting on Federal building energy standards.

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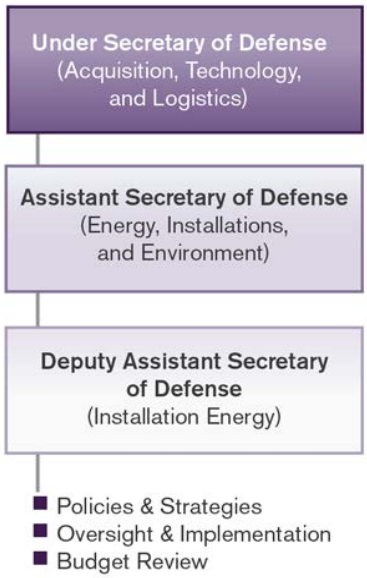
2. Installation Energy Program Management

The Office of the Deputy Assistant Secretary of Defense (Installation Energy) (ODASD(IE)), Installation Energy Program

The ODASD(IE) is responsible for overseeing the Department's Installation Energy Program, its progress toward achieving installation energy goals, and achieving mission assurance in a cost-effective manner. The ODASD(IE) reports to the Office of the Assistant Secretary of Defense (Energy, Installations and Environment) (OASD(EI&E)) and is responsible for issuing installation energy policy and guidance to DoD Components; coordinating DoD installation energy strategies; overseeing energy programs (e.g., energy efficiency, distributed and renewable energy, and energy resilience); engaging with the Military Services, Defense Agencies, and other stakeholders. The ODASD(IE) coordinates all congressional reports related to installation energy. Figure 2-1 illustrates the organizational structure related to the ODASD(IE) and OASD(EI&E). The following sections describe the Defense Components' installation energy programs.

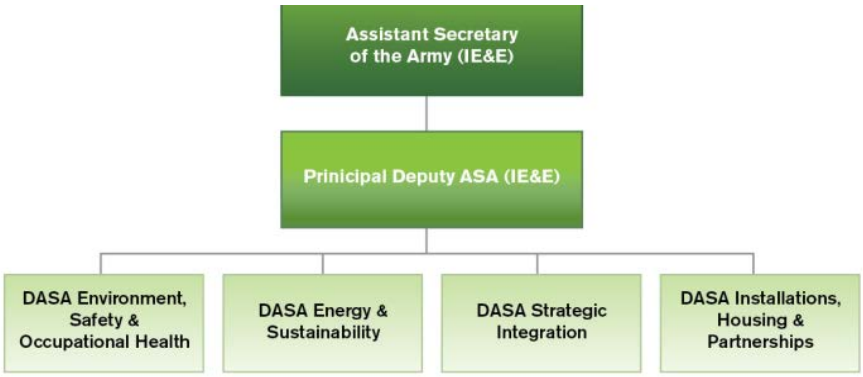
Figure 2-1: Installation Energy Organization Chart



Army Installation Energy Program

The Deputy Assistant Secretary of the Army for Energy and Sustainability (DASA(E&S)) is the Senior Energy Official for the Army. The Army Energy Team consists of the Office of the Assistant Secretary of the Army for Installations, Energy and Environment (OASA(IE&E)), Office of the Assistant Chief of Staff for Installation Management (OACSIM) and the Installation Management Command (IMCOM), Army National Guard (ARNG), U.S. Army Reserve (USAR), and Army Materiel Command (AMC), in collaboration with the U.S. Army Corps of Engineers (USACE), Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology (OASA(ALT)), the Army Staff, other Army Offices and Commands.

Figure 2-2: Army Installation Energy Governance Structure



The Army's Senior Energy and Sustainability Council (SESC) functions as the overall governance of the Army's energy management efforts and provides strategic direction to integrate energy and water sustainability initiatives into Army plans and policies to meet Army's missions and objectives. These initiatives include matters of energy and water resilience, energy and fuel efficiencies, fossil fuel consumption and greenhouse gas (GHG) reductions, rightsizing and downsizing of the NTV fleet, water efficiency and conservation, waste minimization, procurement, and high-performance sustainable buildings.

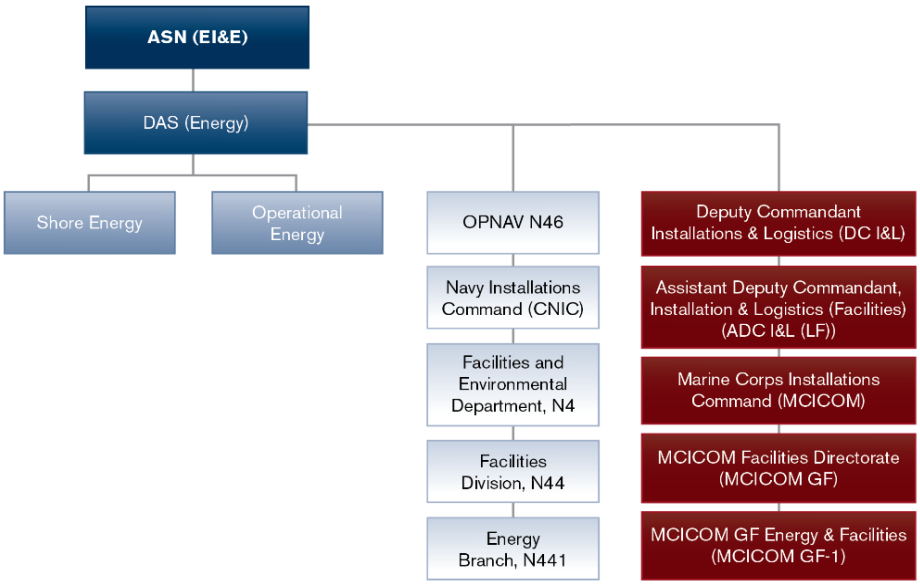
Under the direction of the SESC, the Army published its Energy Security and Sustainability (ES^2) Strategy in May 2015. ES^2 is a roadmap to foster a more adaptable and resilient force that is prepared for a future defined by complexity, uncertainty, adversity, and rapid change. ES^2 is organized around a central theme that recognizes improved energy security and resilience ensure mission readiness. Through the ES^2 goals, the Army is committed to long-term efforts that build and sustain a resilient force and secure resources for our installations at home and abroad.

Department of the Navy (DON) Installation Energy Program

The Assistant Secretary of the Navy for Energy, Installations, and Environment (ASN (EI&E)) is the designated senior DON official for energy, responsible for formulating Department-wide policies, procedures, advocacy and strategic plans, as well as overseeing all DON functions and programs related to energy. The Deputy Assistant Secretary of the Navy for Energy (DASN (Energy)) reports to ASN (EI&E) and is the Chairman of the DON Shore Energy Policy Board. The Office of the Chief of Naval Operations (CNO) Shore Installation Management Division (OPNAV-N46) is responsible for developing policy and programming resources for the Navy's Installation Energy Program. OPNAV N46 also ensures compliance with DON shore energy goals. The Commander, Navy Installations Command (CNIC) is responsible for current and future shore energy requirements across warfare enterprises. CNIC N441 is the energy branch within the Facilities Division (N44) of the Facilities and Environmental Department, N4. CNIC N441 is responsible for developing and integrating shore energy requirements across the Shore Enterprise.

The Deputy Commandant for Installations and Logistics (DC I&L) is responsible for establishing energy and water management policy for Marine Corps installations per direction from the Commandant to comply with Federally-mandated requirements. The Assistant Deputy Commandant for Installations and Logistics (Facilities) serves as the single point of contact responsible for program management and resourcing. The Commander, Marine Corps Installations Command (MCICOM) oversees program planning and execution. Direct support is provided by the Director, Facilities (MCICOM GF). The Energy and Facility Operations Section (MCICOM GF-1) serves as the Marine Corps Installations Energy Program Manager.

Figure 2-3: DON Installation Energy Governance Structure



The Naval Facilities Engineering Command (NAVFAC) provides facilities engineering support to the Navy and Marine Corps. The Deputy Commander for Public Works at NAVFAC Headquarters (HQ) serves as the NAVFAC Energy Officer and oversees the development of relevant energy guidance, standards, processes, and internal policy to NAVFAC.

Air Force Installation Energy Program

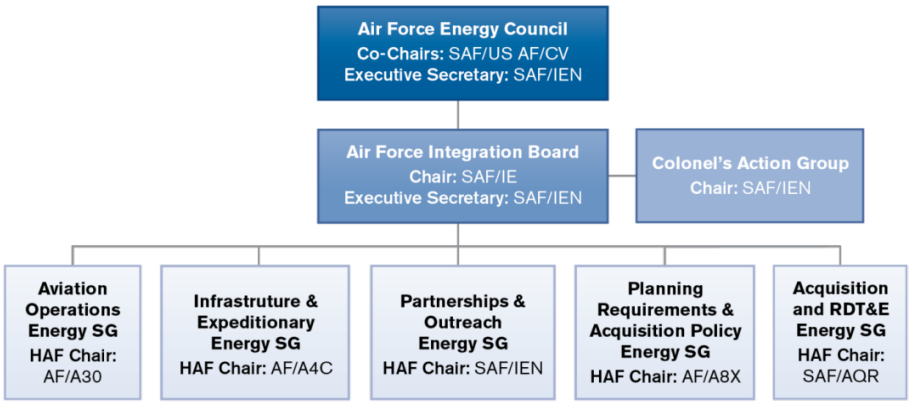
The Air Force Energy Team comprises five entities that work together to meet the Service-wide energy priorities to improve resiliency, reduce demand, assure supply, and foster an energy aware culture.

- **HQ U.S. Air Force (HAF):** Provides the policy, guidance, oversight, and resources to ensure an effective strategy is employed at all levels.
- **Major Commands (MAJCOMs):** Develop plans to support or supplement Air Force goals and strategies, execute programs, evaluate energy usage of subordinate units, and recognize the most successful units and energy practices.
- **Air Force Civil Engineer Center (AFCEC):** Advises HAF and provides assistance to the MAJCOMs and installations by developing plans and strategies to meet mandated energy goals. Manages and facilitates the execution of energy programs as the Project Program Management Office for installation facility energy and water conservation. Establishes outgrant Enhanced Use Lease (EUL) implementation guidelines and resolves program issues. Advocates use of Air Force and DoD resources to fund outgrant project development.

- **Installations:** Develop plans to support or supplement Air Force and MAJCOM goals/strategies. Execute, measure, and evaluate the base energy usage of those plans, and nominate their most successful people and units for energy awards.
- **Installation Energy Manager:** Position required by section 543 of the NECPA (42 U.S.C. § 8253). The scope of duties includes, but is not limited to, responsibility and oversight for the installation's Energy Management Plan, energy awareness, education and training, audits, utility billing, and energy and water consumption reporting.

The Air Force energy governance structure (Figure 2-4) is divided into three levels and includes the Energy Council, Energy Integration Board, Colonels' Action Group, and Steering Groups. This structure is mandated by Air Force Policy Directive (AFPD) 90-17, *Energy Management*, November 29, 2011.

Figure 2-4: Air Force Energy Governance Structure



The Air Force Energy Council provides global oversight to solve the complex energy challenges facing the Air Force. It acts as a deliberative body responsible for developing Air Force energy strategies, monitoring overall attainment of those strategies and priorities, endorsing requirements, reviewing current Air Force energy programs, and directing corrective actions when goals and objectives are not met. To ensure the Air Force is addressing the energy strategies and priorities, the Energy Council reviews and prioritizes all initiatives prior to submittal to the Air Force Corporate Structure for funding decisions. The Energy Council helps garner Air Force corporate structure approval for proposed energy investments that will contribute to achieving Air Force energy goals.

The Council's scope extends to all energy acquisition, use, and conservation issues within the Air Force. This includes initiatives related, but not limited to reducing aviation, ground motor vehicle, and equipment fuel consumption; conserving energy use at all Air Force properties, including forward operating bases; developing alternative sources of energy and fuel; and identifying research and development opportunities.

Reporting to the Energy Council is the Integration Board, which is responsible for aligning investments to goals and objectives across the Air Force, including integrating and balancing energy investments.

The Energy Council and the Integration Board are directly supported by the Energy Colonels' Action Group. The Colonels' Action Group serves as the working group and is in place to disseminate information, track efforts, and provide a venue for Energy Steering Group (ESG) representatives to raise any issues that require collaboration.

Issues are addressed by the five ESGs. The steering groups are responsible for developing energy goals, objectives, metrics, plans, and policies, as well as identifying energy initiatives and investments necessary to meet the Air Force energy goals.

The HAF Steering Group Chairs provide policy, guidance, and lead functional support to the MAJCOM Champions. The Chairs help garner Air Force corporate structure approval for energy investments and efficiency savings. The MAJCOM Champions are responsible for leading efforts, including coordinating with other MAJCOMs, to meet energy requirements, including developing specific energy objectives, metrics, and requirements.

Defense Agencies Installation Energy Program

The Defense Agencies continue to develop and enhance their Installation Energy Management Program. Each agency has a designated Senior Energy Official to administer their respective programs (Table 2-1).

Table 2-1: Defense Agencies Senior Energy Officials

DoD Component	Senior Energy Official
Defense Contract Management Agency (DCMA)	Energy Program Manager
Defense Commissary Agency (DeCA)	Energy Manager
Defense Finance and Accounting Service (DFAS)	Director, Support Services
Defense Intelligence Agency (DIA)	Chief, Engineering and Logistics Officer
Defense Logistics Agency (DLA)	Installation Support Director
Missile Defense Agency (MDA)	Environmental Executive
National Reconnaissance Office (NRO)	Director, Management Services and Operations
National Geospatial-Intelligence Agency (NGA)	Director, Installation Operations Office
National Security Agency (NSA)	Chief of Facilities and Infrastructure Services
Washington Headquarters Services (WHS)	Pentagon Sustainability Program Manager

The Intelligence Community (IC), in particular, has adopted a community-wide approach to maximizing energy and greening opportunities. The Office of the Director of National Intelligence has established an IC Energy Management Working Group composed of individuals with the subject matter expertise and authority to speak for the agency they represent.

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3. DoD's Progress in Reducing Energy Demand

The Department is reducing its demand of installation energy by investing in efficiency and conservation projects on its installations. DoD continues to reduce energy costs and maximize payback in order to have the best return on investment with the majority of DoD investments being utilized for sustainment and recapitalization projects. Such projects typically involve retrofits to incorporate improved lighting; high-efficiency heating, ventilation, and air conditioning (HVAC) systems; double-pane windows; energy management control systems; and new roofs.

In addition to using appropriated funding to improve efficiency—both in the Components' own budget and the DoD-wide Energy Conservation Investment Program (ECIP)—DoD Components are leveraging private capital through the use of performance-based contracts to improve the energy efficiency of existing buildings. In 2011, the President issued a memorandum calling on the Federal Government to initiate $2 billion worth of performance-based contracts. In 2014, the President extended the goal to $4 billion by December 2016, of which DoD is responsible for $2.2 billion. As of January 15, 2016, the Department has awarded 152 projects worth over $1.29 billion.

Installation Energy Demand Overview

This section describes the scope of the Department's installation energy demand in terms of cost and consumption. DoD is the single largest consuming entity in the United States, with its overall energy usage comparable to the state of Oregon's annual commercial consumption.[3] DoD operational and installation energy represent approximately 80 percent of total Federal energy consumption. Installation energy is nearly five times the total energy consumption of the next closest Federal agency (U.S. Postal Service).[4]

In FY 2015, installation energy comprised approximately 22 percent of total Federal energy consumption.[5] The Department's FY 2015 installation energy consumption amounted to 1.1 percent of the total U.S. commercial sector's energy consumption.[6] The Department's total energy bill was $16.7 billion. DoD spent $3.9 billion on installation energy, which included $3.7 billion to power, heat, and cool buildings and $0.2 billion to supply fuel to the fleet of NTVs. Installation energy represented 23 percent of the Department's total energy expenditures. DoD consumed 211,095 billion British thermal units (BBtus) of installation energy, which represented 29 percent of the Department's total energy

[3] Energy Information Administration (EIA), U.S. States, State Profiles and Energy Estimates [online source] (Washington, D.C. 2011, accessed March 9, 2016), available from http://www.eia.gov/state/

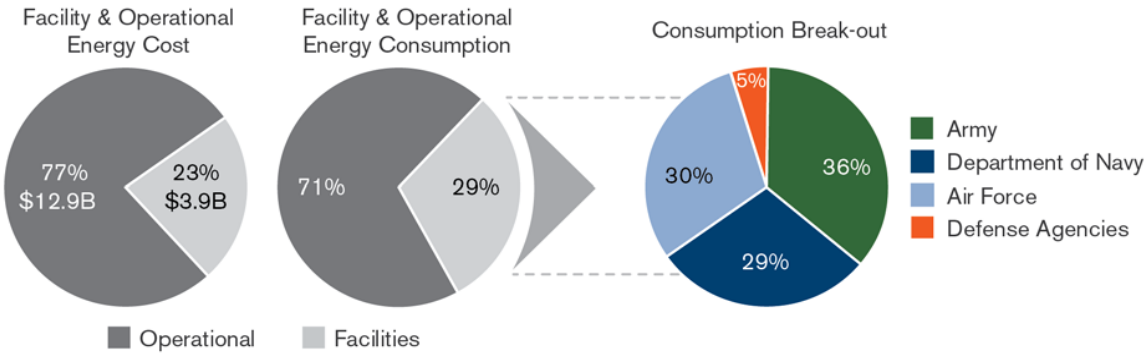
[4] EIA, Annual Energy Review, Table 1.11 U.S. Government Energy Consumption by Agency, FY 1975-2011 [online source] (Washington, D.C. September 27, 2012, accessed March 9, 2016), available from http://www.eia.gov/totalenergy/data/annual/showtext.cfm?t=ptb0111

[5] EIA, Annual Energy Review 2011: Energy Consumption by Sector and Source [online source] (Washington, D.C. , 2011, accessed March 9, 2016), available from http://www.eia.gov/oiaf/aeo/tablebrowser/#release=EARLY2012&subject=0-EARLY2012&table=2-EARLY2012&region=1-0&cases=full2011-d020911a,early2012-d121011b

[6] EIA, Annual Energy Outlook 2015, Energy Consumption by Sector and Source [online source] (Washington, D.C. 2015 accessed March 9, 2016), available on the internet at http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2014&subject=0-AEO2014&table=2-AEO2014&region=1-0&cases=ref2014-d102413a

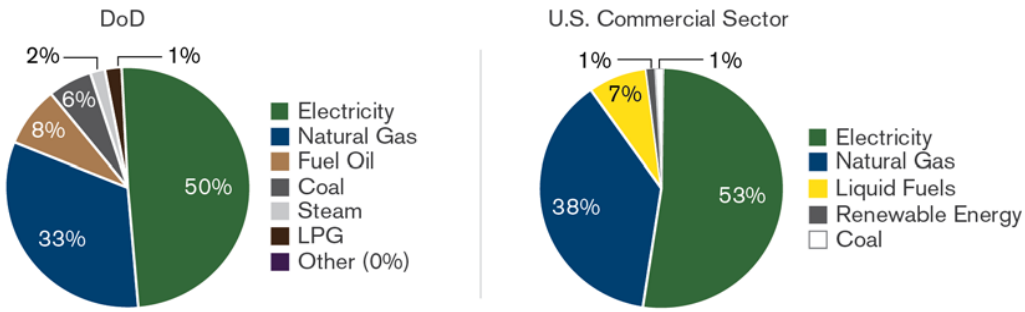
consumption. Of that, DoD consumed 202,075 BBtus in buildings (stationary combustion) and 9,021 BBtus in non-tactical fleet vehicles (mobile combustion). The Army is the largest consumer of installation energy, followed by the Air Force and DON (Figure 3-1).

Figure 3-1: DoD FY 2015 Installation Energy Consumption and Cost



Electricity and natural gas accounted for over 83 percent of DoD installation energy consumption. The remaining portion of installation energy consumption includes fuel oil, coal, and liquefied petroleum gas (LPG) (Figure 3-2). DoD's installation energy consumption mix mirrors that of the U.S. commercial sector, where natural gas and electricity dominate the supply mix.

Figure 3-2: DoD Installation Energy FY 2015 and U.S Commercial Sector Stationary Combustion Fuels by Type[7]



Energy Intensity

DoD measures energy intensity in Btus per gross square foot (GSF) of facility space.[8] Section 543 of the NECPA mandates a 3.0 percent annual reduction in energy intensity relative to a baseline year (FY 2003) or a 30 percent overall reduction from the baseline by FY 2015. The Energy Independence and Security Act (EISA) 2007 further distinguishes the two categories of buildings: those subject to the energy

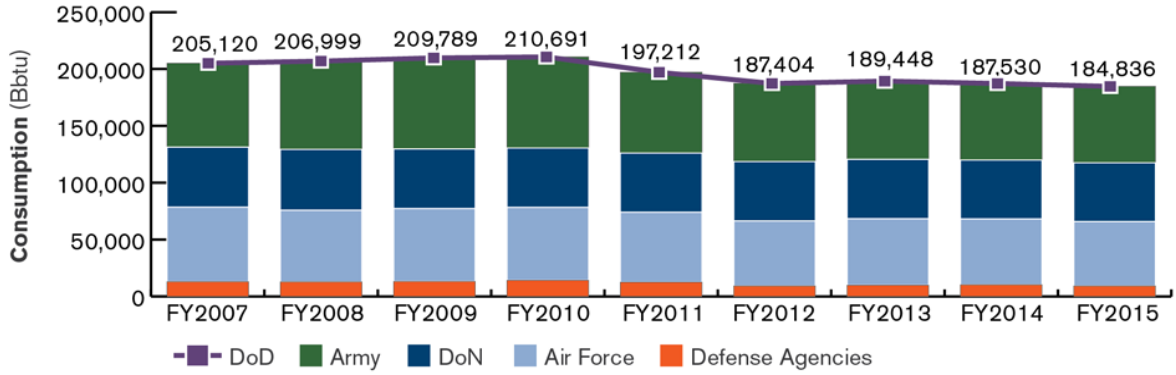
[7] EIA, 2014 Monthly Commercial Sector Energy Use, Table 2.1c [online source] (Washington, D.C. February 24, 2015 accessed March 2, 2015), available on the internet at http://www.eia.gov/totalenergy/data/monthly/

[8] Energy intensity does not include energy consumption from NTVs.

intensity reduction goal and those that can be excluded.[9] This section discusses energy intensity for DoD goal-subject buildings.

In FY 2015, DoD consumed approximately 184,800 BBtus of energy in its goal-subject buildings and 17,200 BBtus in goal-excluded buildings. Figure 3-3 illustrates recent historical trends in installation energy consumption by DoD Components across goal-subject buildings.

Figure 3-3: FY 2015 Installation Energy Goal Subject Consumption by Military Service

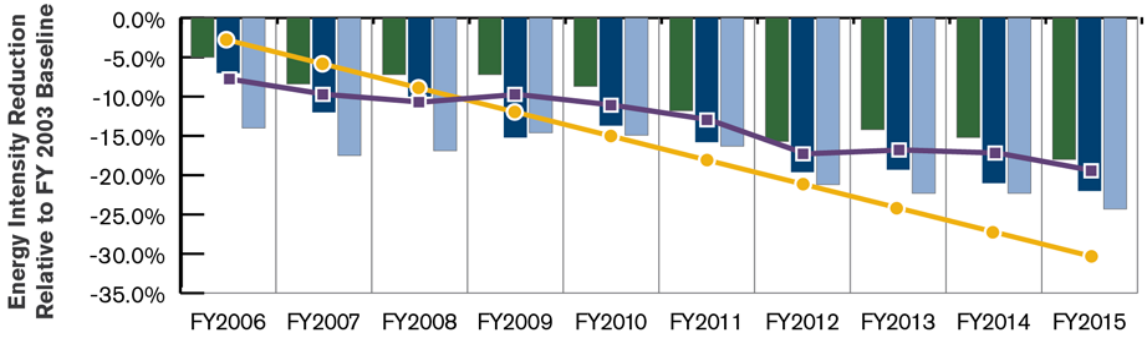


DoD energy intensity has decreased since FY 2003. Figure 3-4 illustrates DoD's and the Military Services' progress toward the EISA 2007 goal. Despite falling short of the FY 2015 intensity reduction goal of 30 percent, DoD reduced its energy intensity by 19.9 percent from the FY 2003 baseline and improved by 2.3 percent from FY 2014. While DoD continues to invest in cost-effective energy efficiency and conservation measures to improve goal progress, there will be challenges in future reductions. These challenges include (1) budget sequestration and delayed appropriations, which lead to a reduction in energy efficiency and conservation projects; (2) uncontrollable variables such as weather and temperature variability (i.e., heating and cooling degree days[10]), increasing installation energy use; and (3) a greater reliance on conducting missions at fixed installations and enduring locations (e.g., training; unmanned aircraft; intelligence, surveillance or reconnaissance missions), leading to an increased reliance on energy from fixed installations and enduring locations.

[9] The criteria evaluated for excluding facilities include impracticability due to energy intensiveness or national security function, completed energy management reports, compliance with all energy efficiency requirements, or implementation of all cost-effective energy projects in the buildings. This energy intensity section discusses only goal-subject buildings. Source: U.S. DOE, Energy Efficiency and Renewable Energy, Federal Energy Management Program, Guidelines Establishing Criteria for Excluding Buildings [online source] (Washington, D.C., 2006, accessed January 2, 2015), available on the Internet at http://www1.eere.energy.gov/femp/pdfs/exclusion_criteria.pdf.

[10] Heating and cooling degree days measure the difference between daily average temperature at a location and a baseline temperature.

Figure 3-4: DoD Energy Intensity EISA 2007 Goal Attainment[11]



	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015
DoD	-8.0%	-10.0%	-11.0%	-10.0%	-11.4%	-13.3%	-17.7%	-17.2%	-17.6%	-19.9%
Army	-5.0%	-8.4%	-7.2%	-7.2%	-8.7%	-11.8%	-15.7%	-14.2%	-15.2%	-18.0%
DoN	-7.0%	-12.0%	-10.0%	-15.2%	-13.7%	-15.8%	-19.6%	-19.3%	-21.0%	-22.0%
Air Force	-14.0%	-17.5%	-16.9%	-14.6%	-14.9%	-16.3%	-21.2%	-22.3%	-22.3%	-24.3%
EISA 2007 Goal	-3.0%	-6.0%	-9.0%	-12.0%	-15.0%	-18.0%	-21.0%	-24.0%	-27.0%	-30.0%

Further, DoD has reported its energy intensity progress to the Department of Energy (DOE) since FY 1975.[12] Since this time, DoD has reduced its energy intensity from 182,153 BBtus in FY 1975 to 93,963 BBtus in FY 2015 (adjusted for on-site renewables and source energy credits), a DoD energy intensity reduction of over 48 percent. Figure 3-5 on the next page illustrates historical trends in DoD reductions of energy intensity since FY 1975. These reductions were a result of substantial low- and no-cost energy efficiency and conservation measures that impacted behavioral changes or project investments such as insulation or lighting upgrades. As these low- and no-cost energy efficiency and conservation initiatives continue to diminish, DoD will be challenged to make broad reductions in energy intensity. These challenges will become more prevalent as budget reductions continue, and priority is given to short-term payback rather than long-term savings. In order to continue to make progress toward annual congressional goals, greater focus may be required on more capital-intensive projects that yield greater life-cycle savings.

[11] The DoD trend line accounts for the Defense Agencies. DoD continues to collect Navy and Marine Corps data separately. In FY 2014, the Navy achieved an intensity reduction of 20.6 percent while the Marine Corps achieved an intensity reduction of 18.7 percent relative to their FY 2003 baseline.

[12] DOE, Energy Efficiency and Renewable Energy, Federal Energy Management Program, *Comprehensive Annual Energy Data and Sustainability Performance* [online source] (Washington, D.C.,2015, accessed March 2, 2015, available from http://ctsedwweb.ee.doe.gov/Annual/Report/TotalSiteDeliveredEnergyConsumptionPerGrossSquareFootByFederalAgenciesByYear.aspx.

Figure 3-5: DoD Energy Intensity Progress since FY 1975

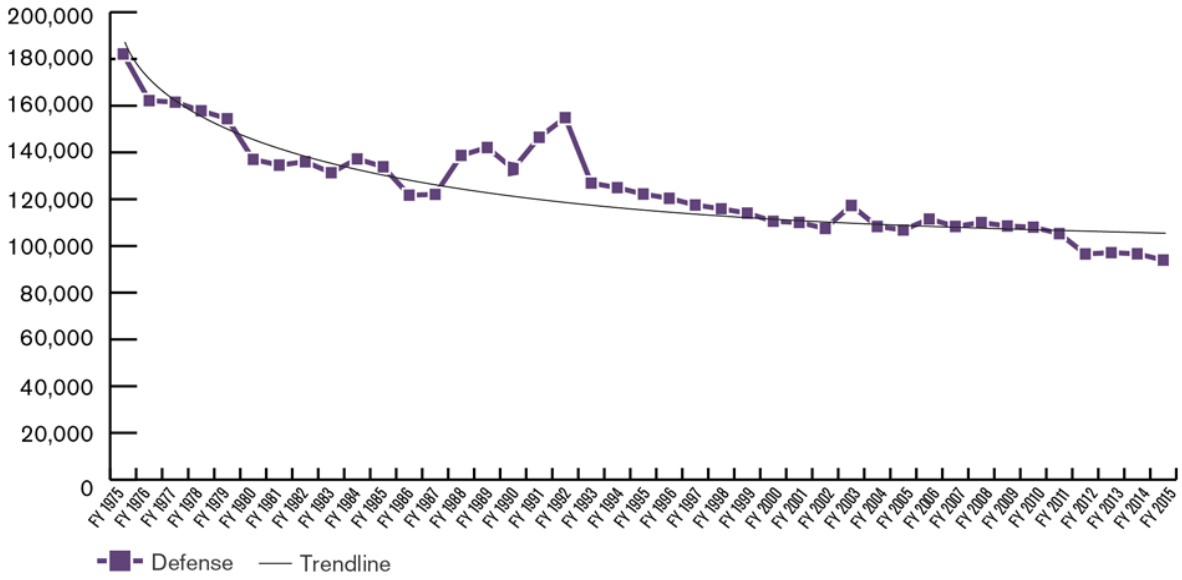


Table 3-1 summarizes annual energy intensity reduction progress across the Department from FY 2008 to FY 2015 as well as FY 2015 reductions from the FY 2003 baseline.

Table 3-1: Energy Intensities across DoD

DoD Component	FY 2003 Baseline Intensity (Btu/GSF)	FY 2008 Intensity (Btu/GSF)	FY 2009 Intensity (Btu/GSF)	FY 2010 Intensity (Btu/GSF)	FY 2011 Intensity (Btu/GSF)	FY 2012 Intensity (Btu/GSF)	FY 2013 Intensity (Btu/GSF)	FY 2014 Intensity (Btu/GSF)	FY 2015 Intensity (Btu/GSF)	FY 2015 Reduction Relative to Baseline
DoD	117,334	103,692	104,527	102,929	100,268	96,596	97,149	96,648	93,963	-19.9%
Army	97,248	89,802	93,051	91,499	85,739	82,002	83,432	82,463	79,709	-18.0%
DON	127,018	109,550	103,245	105,036	103,263	102,092	102,444	100,387	99,035	-22.0%
Air Force	140,165	113,368	116,529	116,090	114,154	110,486	108,926	108,839	106,160	-24.3%
DCMA	104,425	126,299	130,494	129,435	N/A	119,070	118,319	123,083	112,121	7.4%
DeCA	146,052	139,623	136,703	136,182	138,595	135,411	132,073	130,967	129,722	-11.2%
DFAS	151,807	101,445	93,338	96,755	77,800	87,602	85,860	72,199	70,868	-53.3%
DIA	229,108	216,622	216,972	194,736	201,166	175,866	170,272	164,843	162,195	-29.2%
DLA	51,385	60,832	49,563	49,425	52,497	48,416	46,392	50,939	48,644	-5.3%
NGA	177,040	195,803	218,140	212,516	169,458	121,579	100,872	102,383	101,028	-42.9%
NSA	263,456	256,728	281,260	286,849	292,726	295,033	298,639	311,519	222,035	-15.7%
WHS	179,000	187,000	184,000	185,000	181,000	173,530	145,695	147,240	139,173	-22.2%
NRO	N/A	N/A	N/A	N/A	276,357	276,197	265,823	299,005	215,093	N/A
MDA	N/A	N/A	186,061	N/A	N/A	N/A	N/A	N/A	N/A	N/A

In FY 2010, DoD began to track and report energy consumption and square footage at individual installations. This has allowed the Department to monitor energy intensity by installation as well as at the component level. Appendix E summarizes FY 2015 installation-level data.

The Committee on Appropriations of the House of Representatives directed the Secretary of Defense to report the energy use and energy efficiency projects of the ten largest installations as well as the Pentagon. Tables 3-2 and 3-3 address the congressional requirement in House Report 113-473. The majority of the installations below reported decreases in intensity from FY 2010 to FY 2015, with an average reduction of approximately 11.2 percent.

Table 3-2: 10 Largest GSF Installations Energy Use Intensity (EUI) FY 2010 – FY 2015

Component	Installation Name	FY10 Intensity (BBtu/GSF)	FY11 Intensity (BBtu/GSF)	FY12 Intensity (BBtu/GSF)	FY13 Intensity (BBtu/GSF)	FY14 Intensity (BBtu/GSF)	FY15 Intensity (BBtu/GSF)	Change from FY10 to FY15
Air Force	Joint Base San Antonio - Fort Sam Houston	118.8	116.1	113.8	115.7	112.5	110.6	-7%
Army	Fort Bragg	121.1	104.4	112.6	105.3	104.8	99.1	-18%
Army	Joint Base Lewis-McChord	97.1	102.4	99.6	88.8	80.4	82.6	-15%
Army	US Army Garrison Rheinland-Pfalz (Kaiserlautern)	54.8	56.0	60.6	66.8	43.4	48.7	-11%
Army	US Army Garrison Bavaria (Grafenwoehr)	59.9	59.1	60.6	64.0	57.8	58.9	-2%
Marine Corps	MCB Camp Lejeune	137.4	133.1	121.6	129.7	132.1	124.2	-10%
Air Force	Kadena Air Base	58.6	55.1	54.6	52.1	51.9	52.2	-11%
Army	Fort Bliss	91.1	80.4	66.3	66.6	63.2	61.8	-32%
Army	Fort Hood	125.0	75.7	79.4	87.7	90.1	93.8	-25%
Army	Fort Benning	83.1	80.0	82.2	113.9	95.0	95.5	15%
WHS	Pentagon Reservation	171.9	180.2	173.7	169.1	168.8	158.5	-8%

Table 3-3: Audit and Energy Efficiency Project Details of Installations

Installation	Most Recent Audit Date	Project Examples
Joint Base San Antonio - Fort Sam Houston	23-May-13	▪ Heating System repairs ▪ Window Insulation ▪ Central Energy Plant Upgrade
Fort Bragg	1-Jun-13	▪ Upgrade Approx 450 Failing and Inefficient Hi-Bay Lighting in Five (5) Combat Aircraft Maintenance Hangars Aboard SAAF
Joint Base Lewis-McChord	28-Jun-13	▪ General improvements: LED lighting, sensor controls, retrofits ▪ Boiler upgrades: controls, fan drives
US Army Garrison Rheinland-Pfalz (Kaiserlautern)	1-Jun-11	▪ N/A
US Army Garrison Bavaria (Grafenwoehr)	18-Mar-13	▪ Install Glass Doors on Open medium temperature multi-deck display cases (DeCA)
MCB Camp Lejeune	5-Jul-11	▪ General Energy Efficiency Repairs ▪ HVAC Improvements ▪ Boiler Modifications
Kadena Air Base	2-Jun-11	▪ Lighting replacement/repair/upgrade ▪ HVAC replacement/repair ▪ Key Card controls for HVAC/lighting
Fort Bliss	28-Jun-13	▪ LED Street Lighting/Retrofitting ▪ Micro-grid
Fort Hood	21-Jun-13	▪ Utility Monitoring Control System upgrades and integrating
Fort Benning	24-Jun-14	▪ Utility Monitoring Control System upgrades and integrating ▪ Lighting replacement/repair/upgrade ▪ Solar Thermal Water Heating
Pentagon Reservation	14-Jun-12	▪ Automatic boiler blow down modification ▪ Revolving doors ▪ On-going commissioning ▪ Metering ▪ Stream distribution system and traps

Army

In FY 2015, the Army reduced its energy intensity by 18 percent from its FY 2003 baseline, a 2.8 percent reduction from FY 2014, while continuing its two-year trend in facility EUI reduction despite removing 34.5 million square feet of

Corpus Christi Army Depot

One of the top-performing Army installations in terms of reducing energy intensity from FY 2014-2015 through aggressive energy efficiency programs, metering efforts, and a large ESPC award.

building space. In FY 2015, Army achieved its highest reduction in energy consumption in the history of the program. The Army will continue to identify and implement the most cost-effective EUI reductions while still maintaining mission readiness. Progress toward this goal must be considered in the context of the Army's pressing requirement to reduce costly, excess square footage.

Of 143 installations reported in the Army's AEMR submission, 43 (30.1 percent of all installations) are on track to meet the energy efficiency goal by achieving at least a 30 percent reduction in EUI since FY 2003. The following are examples of energy efficiency projects in FY 2015:

- Fort Drum, NY: Achieved 100 percent of energy requirement from 60 megawatt (MW) biomass plant, successfully reducing garrison's conventional energy use and lowering associated installation EUI.
- 88th Regional Support Command, Fort McCoy, WI: Conducted active implementation of HVAC night setback program and lighting efficiency projects at multiple facilities to greatly reduce EUI.
- Rock Island Arsenal, IL: Achieved EUI reductions associated with 25 percent lower factory electrical use, 38 percent more hydro generation, 12 percent fewer heating degree days, and in-progress Energy Savings Performance Contracts (ESPC) task orders focused on lighting efficiency.
- Virginia ARNG, VA: Pursued aggressive efficiency and renewable energy programs, as well as implemented a statewide ESPC investment of $24 million on facility upgrades. Army Energy and Utility Program funds further facilitated energy reduction efforts and renewable energy production.

DON

In FY 2015, DON reduced its energy intensity by 22 percent, a 1.0 percent increase over FY 2014, relative to its FY 2003 baseline. The Navy and the Marine Corps reduced their energy intensity relative to the baseline year by 21.5 percent and 20.2 percent, respectively. Both the Navy and the Marine Corps expect progress to improve in FY 2016 as renewable projects developed and procured during FY 2015 begin coming online.

NCBC Gulfport

Naval Construction Battalion Command (NCBC) Gulfport received a $50,000 rebate check from Mississippi Power through participation in their Energy Efficiency Program, achieving large energy savings through an exterior LED lighting project and chiller replacement project.

In FY 2015, the Navy and Marine Corps invested approximately $222 million on projects targeting building-level energy conservation measures (e.g., upgrades to lighting, heating and cooling systems, natural gas distribution main upgrades). These investments are expected to help the Navy continue to reduce its energy intensity. The following are examples of energy efficiency projects in FY 2015:

- Naval Support Activity (NSA) Crane: NSA Crane and Indiana University signed the NSA Crane Educational Partnership Agreement, in which Indiana University students will apply their talents toward installation management challenges. An initial project with graduate students from the

School of Public and Environmental Affairs resulted in a study examining energy use and applying behavioral science tools designed to reduce energy use.

- Naval Base (NB) Kitsap-Bremerton: A $6.6 million contract was awarded to perform energy efficiency measures in 11 buildings on base and the military housing area. Completion of the work is expected in May 2016.
- Naval Station (NS) Everett: NS Everett completed a major lighting retrofit for high mast lighting using light emitting plasma (LEP) technology. The installation estimated savings of at least $16,000 per year on maintenance costs while providing brighter and safer work areas for personnel.
- Naval Air Station (NAS) Jacksonville: Using ECIP funding, the Fleet Readiness Center Southeast Aircraft Paint and Finishing Hangar is undergoing a renovation to replace old motors with premium efficiency motors. These large make-up air fans will be retrofit with variable frequency drive fans and are expected to result in significant energy savings. The project also includes the implementation of a "smart" control system and the replacement of incandescent lighting with explosion-proof LED lighting. Overall, the project is estimated to save almost 31 million Btu annually and approximately $864,000 in cost per year.

Air Force

In FY 2015, the Air Force reduced energy intensity by 24.3 percent from its FY 2003 baseline, a 2.0 percent increase from FY 2014. Both energy consumption and square footage decreased in FY 2015 for the Air Force.

Kadena AB, Japan

A $58.5M project is underway to upgrade the airfield with LED lights. Replacing quartz and incandescent lighting with LED is expected to reduce consumption by 83% and last 40 times longer.

Key contributors to consumption reduction consistently identified across Air Force installations include (1) realization of savings from prior year installation energy savings project investment, (2) energy awareness programs, (3) continuing ESPC and Utility Energy Services Contract (UESC) initiatives, and (4) retro/re-commissioning facility HVAC systems. The following are examples of energy efficiency projects in FY 2015:

- Hill AFB, UT: Has six active ESPCs and is in the planning stage of executing a new ESPC containing both process and facility improvements in 55 buildings.
- Grand Forks AFB, ND: Conducted replacement of electrical hot water heaters with natural gas hot water heaters for base dormitories, saving 60 percent in energy costs. The base's high pressure sodium street lights are currently being replaced with LED lights with energy cost reductions calculated around 60 percent and a payback of less than two years.
- Sheppard AFB, TX: Near completion of a base-wide LED retrofit for street light, parking lot, and building mounted exterior fixtures, as well as an interior lighting project currently in construction that will contribute to the removal of the remaining magnetic ballasts and T-12 fixtures on base. A mechanical/HVAC project and a base-wide infrared heating initiative in

approximately 18 hangar/warehouse locations was also completed, costing over $9 million total and significantly contributing to the installation's EUI in coming years.

Defense Agencies

In FY 2015, the Defense Agencies continued to pursue opportunities to reduce energy intensity. Some highlights of successes are included below.

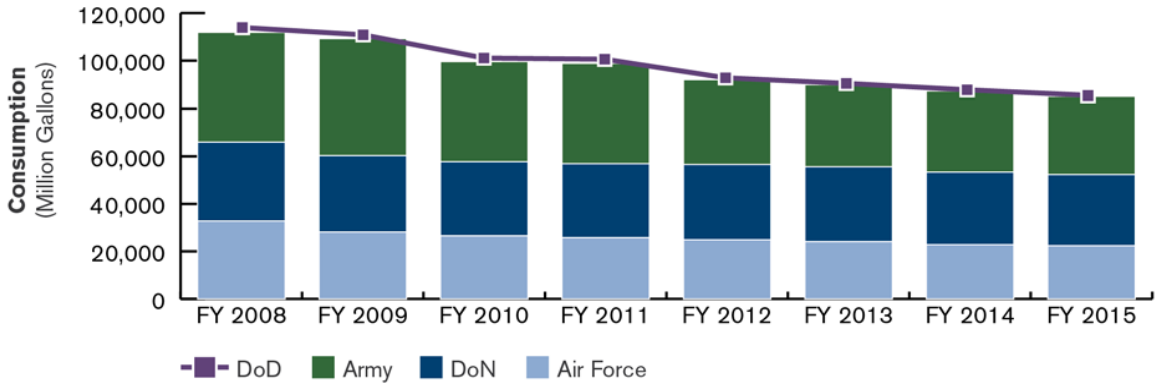
- WHS recently completed rebuilding of chillers and repairing of water-side economizers utilizing river water during winter months to provide free cooling, resulting in huge benefits during FY 2015 as river water temperatures in January and February were sufficient to offset compressor cooling for over two months. This helped decrease monthly electric usage at the Pentagon to the lowest point in over five years.
- DFAS executed a feasibility study under a UESC at Carson, CA, and an investment grade audit under an ESPC at Bratenahl, OH, that covers 100 percent of DCMA's reportable facilities, with energy and water conservation projects identified and task orders planned for award and execution in FY 2016.
- DIA worked with DLA-Energy to execute a task order under DOE's ESPC program in FY 2015. The ESPC will help DIA reduce energy use by an additional 9.0 percent and save $996,000 per year.

Potable Water Consumption and Intensity

> ***Potable Water*** *includes water purchased from a utility (water) provider and all fresh water (e.g., well and streams) treated and added to the domestic (for human consumption) system.*

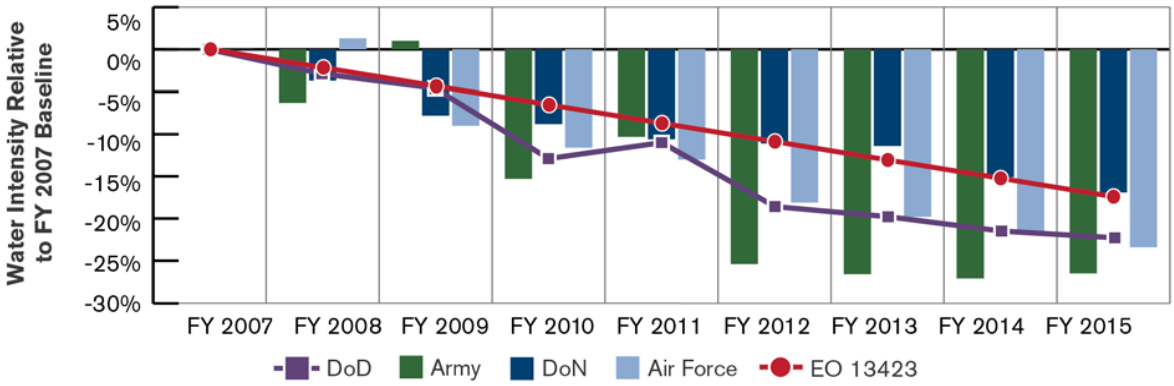
Executive Order (EO) 13423 requires Federal agencies to achieve a 16 percent reduction in potable water intensity by FY 2015 compared to a FY 2007 baseline. EO 13693 extends the reduction goal to 36 percent by FY 2025 relative to the FY 2007 baseline, which will be the specified goal in FY 2016's AEMR publication. DoD potable water consumption has been decreasing since FY 2008. In FY 2015, DoD facilities consumed just over 86 billion gallons of potable water (Figure 3-6), with the Military Departments accounting for over 98 percent of total DoD potable water consumption.

Figure 3-6: DoD Potable Water Consumption FY 2008 – FY 2015



DoD's potable water intensity in FY 2015 was 22.3 percent below its FY 2007 baseline (Figure 3-7), ahead of the 16 percent reduction goal.

Figure 3-7: DoD Water Intensity EO 13423 Goal Attainment – FY 2015



Army

In FY 2015, Army's potable water intensity was 26.5 percent below the FY 2007 baseline, a 1.8 percent regression from FY 2014. Guided by ES^2 Strategy, the Army exceeded potable water and industrial, landscaping, and agriculture (ILA) water conservation goals in FY 2015. Although water intensity increased from FY 2014 to FY 2015, the Army is ahead of schedule to reduce its potable water intensity by 26 percent by FY 2020 and is currently 10.5 percent ahead of the FY 2015 target.

The Army continues to reduce water intensity by detecting and repairing leaks in potable water distribution systems. For example, Radford Army Ammunition Plant, VA; Tooele Army Depot, UT; and Fort Bragg, NC, have undertaken comprehensive modernizations of their respective water systems. By reducing water lost to leaks and supplementing potable water with alternative water, they achieved a water savings of 5 million gallons annually. The Army Reserve has achieved similar success, reducing multiple categories of water consumption. In FY 2015, the Army Reserve reduced potable water intensity by 42 percent and ILA consumption by 25 percent, spearheaded by savings at key installations like Fort Buchanan, Puerto Rico.

DON

In FY 2015, DON's potable water intensity was 16.9 percent below the FY 2007 baseline, a 1.8 percent improvement from FY 2014. The Marine Corps improved upon its incredible progress achieved in the past three years, exceeding the FY 2020 target ahead of the deadline and reducing potable water intensity by 31.1 percent.

The Navy's potable water intensity was 12.2 percent below its FY 2007 baseline. While the Navy did not meet its goal, there were a number of successes at Navy military installations:

- Region Southwest: With California calling for water cutbacks, the Region Southwest Commander ordered a reduction of 925 million gallons of water annually by 2020. While Southwest installations have already implemented key measures to reduce water consumption, including replacement of landscaping with drought-resistant plants and artificial turf, new potential projects are being identified.
- NAS Whidbey Island: The installation engaged building managers and Building Energy Monitors (BEMs) in efforts to identify, secure, and report water leaks for repair.
- NAS Lemoore: A funded Environmental Security Technology Certification Program (ESTCP) project will demonstrate ice pigging technology that can reduce water consumption associated with maintaining and improving water distribution systems. While there is limited demonstration data for sites in the U.S., ice pigging has been shown to use significantly less water than traditional flushing methods and could greatly support the water restrictions issued by California during 2015.

DON continues to install low flow fixtures, such as sink aerators, showerheads, toilets, and urinals to reduce potable water intensity in its buildings while implementing efforts to manage water. Similar to

energy efficiency projects, the Navy selects water projects for their returns on investment. In many cases, though, water efficiency improvements are combined with other energy savings projects to maximize the economic benefits.

Air Force

In FY 2015, Air Force potable water intensity was 23.4 percent below the FY 2007 baseline, a 1.5 percent improvement from FY 2014. The Air Force exceeded its FY 2015 goal through leak detection and infrastructure repair, fixture replacement and upgrade, irrigation system disconnection, and using non-potable water sources for ILA water use.

The Air Force will continue to emphasize water conservation awareness through Energy Action Month and various other educational and public awareness avenues. Kirtland AFB, NM, has converted many turf grass areas to xeriscape and upgraded the primary irrigation controller to a more efficient system. Following an AFCEC Asset Visibility Team visit in June 2015, AFCEC is providing funding for a "Just Do It" water conservation measure to install aerators on more than 1,100 faucets in 30 buildings. Cape Canaveral Air Force Station (CCAFS) has replaced miles of oversized potable/fire water piping for launch operations with new piping that reduces leaks and reduces the amount of flushing required for clean drinking water. The water line projects caused an increase in water consumption last year and in early FY 2015 due to flushing requirements for new lines, but resulted in a major decrease in overall consumption throughout FY 2015 as the projects were completed.

Utilities Privatization (UP) efforts have improved water efficiency through the systematic replacement and repair of leaking water lines. AFERS data analysis indicates UP provides, on average, a 28 percent water consumption reduction when compared to non-privatized systems. In addition, with the award at Vandenberg, the new system owner will use a new technology to recycle and reuse over 1 billion gallons of water per year in their line flushing operations.

Defense Agencies

In FY 2015, Defense Agencies reduced their potable water intensity by 19.3 percent from the FY 2007 baseline and continued to pursue opportunities to reduce potable water intensity.

- DeCA installed low-flow bathroom fixtures throughout DIA HQ, increasing reduction an additional 10 percent from FY 2014.
- NGA identified and repaired NGA Campus East's (NCE) backup water pond piping system, optimized NCE's irrigation system, and increased focus on improving efficiencies, accuracy, and management capabilities.

Industrial, Landscaping, and Agricultural Water Consumption

> ***ILA Water*** *includes naturally occurring water (e.g., lake, well, river water that is not treated [fresh]) used in an ILA application. ILA also includes any non-potable water purchased from a third party.*

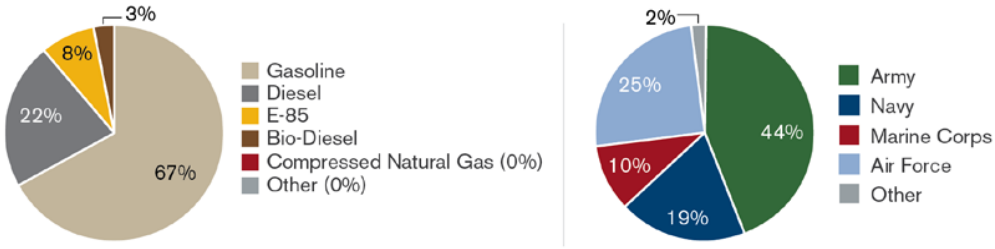
In FY 2009, EO 13514 established a new water reduction goal. The goal requires Federal agencies to reduce ILA water consumption by 2 percent annually, or 20 percent by FY 2020, relative to an FY 2010 baseline. This was extended through 2025 in EO 13693, which is applicable beginning in FY 2016. In FY 2013, the Council on Environmental Quality (CEQ) released guidance for Federal agencies, including DoD, to improve ILA water reporting. In FY 2015, DoD established supplemental guidance for Components to accurately establish a baseline, measure, and estimate ILA water use that sets Components' baseline year to FY 2016 as opposed to EO 13693's baseline year of 2010.

The Components continue to use standard methods to measure ILA consumption and identify strategies to reduce use. Projects such as xeriscaping, converting water-wash filtering systems to a dry filter system, and renovating athletic fields with artificial turf are being implemented across the Services. Policy changes to promote more efficient irrigation and mirroring local utilities by adopting water restrictions have enabled DoD to make strides in reducing consumption.

Non-Tactical Fleet Vehicle Petroleum Consumption

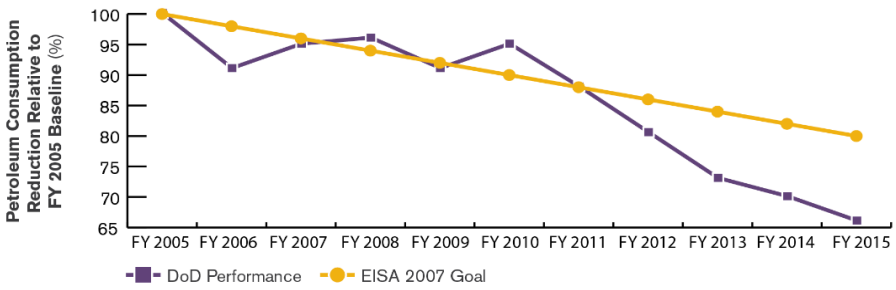
Section 400FF of the Energy Policy and Conservation Act, as amended by EISA Section 142, requires Federal agencies to achieve a 20 percent reduction in non-tactical fleet vehicle petroleum consumption by FY 2015 compared to a FY 2005 baseline. EO 13693 slightly reorients the goal to meet petroleum consumption reduction by reducing per-mile GHG emissions 30 percent by FY 2025 from a FY 2014 baseline. Fleet vehicle fuel consumption accounts for about 4.0 percent of DoD's installation energy consumption and largely consists of gasoline. Diesel fuel represents 22 percent of the fuel mix while alternative fuels make up the remaining fleet vehicles' fuel mix. The Military Services account for slightly less than 97 percent of the Department's petroleum consumption (Figure 3-8).[13]

Figure 3-8: FY 2015 Fleet Vehicle Petroleum Consumption



In FY 2015, DoD fleet vehicles consumed just over 72 million gallons of gasoline equivalent (GGE), which includes gasoline and diesel/biodiesel blends. The mix of petroleum fuel types has remained relatively stable over the past seven years, and the use of alternative fuel vehicles (AFVs) has steadily increased. In FY 2015, 11 percent of the total fleet vehicle consumption was from alternative fuels, up from 10 percent in FY 2014. Alternative fuels include biodiesel, compressed natural gas (CNG), 85 percent ethanol fuel (E85), and hydrogen. In FY 2015, petroleum consumption was 33.6 percent below the baseline (Figure 3-9). DoD continues to pursue replacement of fleet vehicles with more efficient models, AFVs, and hybrid electric vehicles to decrease petroleum consumption.

Figure 3-9: DoD Fleet Vehicle Petroleum Consumption, EISA 2007 Goal Attainment



[13] "Other" category includes the Defense Agencies.

Army

In FY 2015, the Army enhanced sustainability and energy security by exceeding the cumulative fossil fuel reduction goal of 20 percent with a 41.1 percent reduction, which also exceeds the mandated FY 2020 cumulative goal of 30 percent. The Army reduced its NTV fleet by 1,684 vehicles in FY 2015, for a total reduction of over 16,400 NTVs since FY11. The Army is optimizing its NTV fleet annually through the Vehicle Allocation Methodology (VAM) process. The strategy is to replace passenger vehicles meeting age or mileage criteria with hybrid, plug-in hybrid, or zero emission vehicles. Buses and larger trucks are being replaced with CNG or LPG vehicles. This strategy facilitates the fossil fuel reduction mandates and lowers GHG emissions in the most economical and mission-effective manner. For example, at Fort Hood, TX, the Army has fourteen 15 KW Alternating Current charging stations for Ford F-150 hybrid electric trucks and five 15 KW Direct Current charging stations for Nissan Leafs. These are vehicle to grid (V2G) enabled and can provide demand response, peak shaving, and ancillary services in the wholesale market as well as limited emergency backup power to critical functions.

DON

In FY 2015, the Navy and Marine Corps reduced its petroleum consumption by 25.1 percent and 42.9 percent respectively compared to its FY 2005 baseline. The DON is committed to using AFVs, fuel-efficient technologies, and fleet optimization to reduce petroleum consumption and GHG emissions. In FY 2015, various pilot studies and testing were completed in the areas of plug-in hybrid trucks, car sharing, and hydrogen fueling. The Navy completed construction of six solar carports at various Installations within the Southwest, Mid-Atlantic, and Southeast regions. Three additional solar carports under construction in the Southwest region are scheduled to be completed by the end of FY 2016. There were 53 Electric Vehicle Charging Equipment (EVSE) stations installed at various Naval Installations: Joint Base Anacostia-Bolling, NB Kitsap-Bremerton, NB Kitsap Bangor, NS Everett, and Naval Surface Warfare Center (NSWC) Crane. In addition, approximately 250 charging stations are planned to be installed across the Southwest region by end of calendar year 2016. There were also three E85 stations completed in 2015 throughout the Mid-Atlantic and Hawaii regions.

With petroleum consumption reduction being a critical component of increased energy resilience, the Marine Corps will continue to assess installation transportation requirements in consideration of technologies and infrastructure to reduce petroleum use. Part of the Marine Corps' strategy is to optimally place AFVs at installations by considering mission, driving conditions, and fuel availability. Another component is to pursue existing alternative vehicle technologies and fuels such as hydrogen fuel cell or battery electric vehicles.

Air Force

In FY 2015, the Air Force reduced its petroleum consumption by 14.7 percent compared to its FY 2005 baseline, falling short of the FY 2015 goal of 20 percent.

The Air Force gives procurement preference to the most fuel efficient and cost effective AFVs, hybrid electric vehicles, and/or plug-in electric vehicles (PEVs) that meet diverse vehicle and mission support requirements. Following the Air Force Vehicle Allocation Methodology Plan, the 441 Vehicle Support Chain Operation Squadron (VSCOS), in conjunction with the Air Force Life-Cycle Management Center (AFLCMC) at Robbins AFB, GA, maximizes the procurement of AFVs while considering mission requirements, AFV/PEV availability, and sustainment infrastructure capabilities; with emphasis on alternative fuel use, fuel-efficient hybrid technology, and reducing GHG emissions.

In FY 2015, the Air Force successfully deployed an all-electric vehicle fleet at Los Angeles AFB (LAAFB), making it the first Federal facility to do so. As of October 2015, LAAFB had converted all 43 vehicle authorizations to PEVs including Nissan Leaf sedans, cargo vans, 2T box trucks, Surrey Bus, and hybrid light-duty pickup trucks. A majority of the vehicles at LAAFB will be used to demonstrate V2G capability, effectively selling energy stored in the vehicle battery to the local utility in exchange for monetary compensation. Predicting a general shift toward more efficient and less GHG intensive vehicle technologies, the V2G demonstration will test both the viability of electric vehicle use in a non-tactical mission, as well as the use of the vehicle as an energy storage resource, providing stability to the grid and reducing overall power generation needs. This project represents the largest procurement of highway-capable PEVs for a Federal fleet, as well as a first of its kind demonstration of V2G technology as a means to bolster grid energy security.

Defense Agencies

In FY 2015, the Defense Agencies accounted for 2.2 percent of DoD fleet petroleum consumption and continued to pursue opportunities to reduce NTV consumption.

- NGA ended its U-drive program in FY 2015, completely dispersing the 30 vehicle FY14 U-drive fleet and reducing the agency's petroleum consumption significantly. Additionally, the inventory of NGA extended lease vehicles was reduced by five vehicles.
- NSA continues to lease hybrid and AFVs to achieve the EO 13514 goal. NSA's current non-tactical fleet includes 86 hybrid vehicles and 360 AFVs.

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4. Increasing DoD's Supply of Renewable Energy

In addition to reducing facility energy demand, DoD is increasing the supply of renewable and other forms of distributed (on-site) energy on installations. DoD continues to invest in cost effective renewable and distributed energy solutions. DoD's strategy not only considers the cost-effectiveness of renewable and distributed energy solutions, but also the energy resilience benefits they could provide to our installations.

DoD Renewable Energy Performance

As DoD pursues renewable energy to advance its energy resilience, it also seeks to comply with legal requirements to increase renewable energy. The Department is subject to two renewable energy goals put forth in 10 U.S.C. § 2911(e) and Section 203 of the Energy Policy Act (EPAct) 2005 (42 U.S.C. 15852).

Title 10 U.S.C. §2911(e) established a goal for DoD to produce or procure not less than 25 percent of the total quantity of facility energy it consumes within its facilities during FY 2025 and each fiscal year thereafter from renewable energy sources. DoD's progress toward the 10 U.S.C. § 2911(e) renewable energy goal was 12.4 percent.

The EPAct 2005 goal measures total renewable electricity consumption as a percentage of total facility electricity consumption. The EPAct 2005 goal for FY 2015 is 7.5 percent. The 10 U.S.C. §2911(e) goal is 15 percent by FY 2018[14] and 25 percent by FY 2025. In his 2012 State of the Union address, the President announced DON's 1 gigawatt (GW) goal. The Army and Air Force subsequently established a goal of deploying 1 GW of renewable energy on or near their installations following the President's announcement. Following these announcements, in April 2012, the Executive Office made official that DoD had committed to having 3 GWs of renewable energy deployed on its installations by FY 2025 (Table 4-1). DoD also worked with CEQ, the Office of Management and Budget (OMB), and DOE to establish an implementing guidance for the newly established EO 13693, which was signed by the President in March 2015, and includes new renewable electric and clean energy targets.

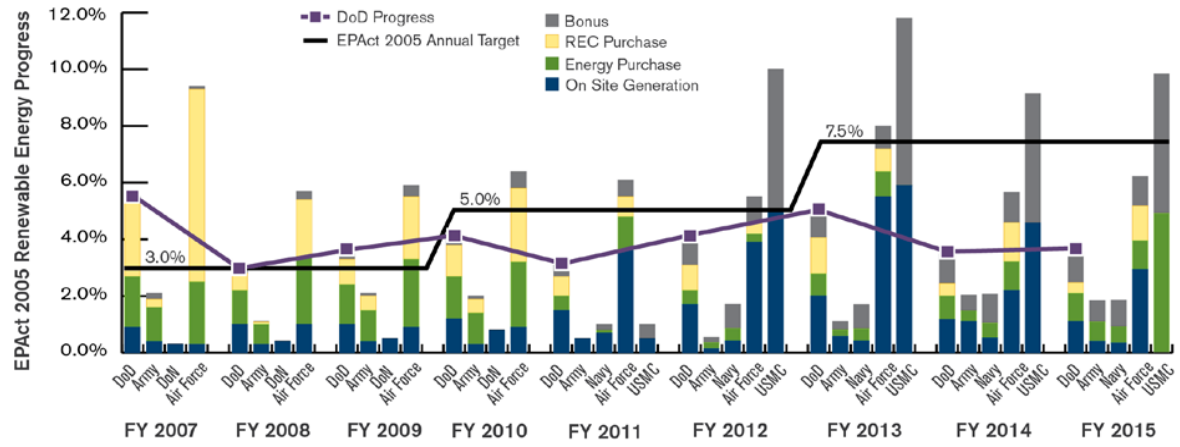
Table 4-1: Renewable Energy Goals: Understanding the Differences between EPAct 2005, 10 U.S.C 2911(e), and the DoD 3 GW Initiative[15]

	EPAct 2005 Goal	10 U.S.C. §2911(e) Goal	DoD 3 GW Initiatives
Measure	5 percent in FY 2010-2012 7.5 percent in FY 2013 onwards	15 percent by FY 2015 25 percent by FY 2025	3 GW of Renewable Capacity by FY 2025
Unbundled Renewable Energy Credits (RECs) Purchases	Yes	No	No
Renewable Energy Purchases	Yes	Yes	No

[14] This interim renewable energy goal was established as part of the Energy Performance Master Plan in the FY 2011 AEMR. See Appendix C for details on DoD energy goals.
[15] Each Service has an independent target year for its 1 GW goal attainment.

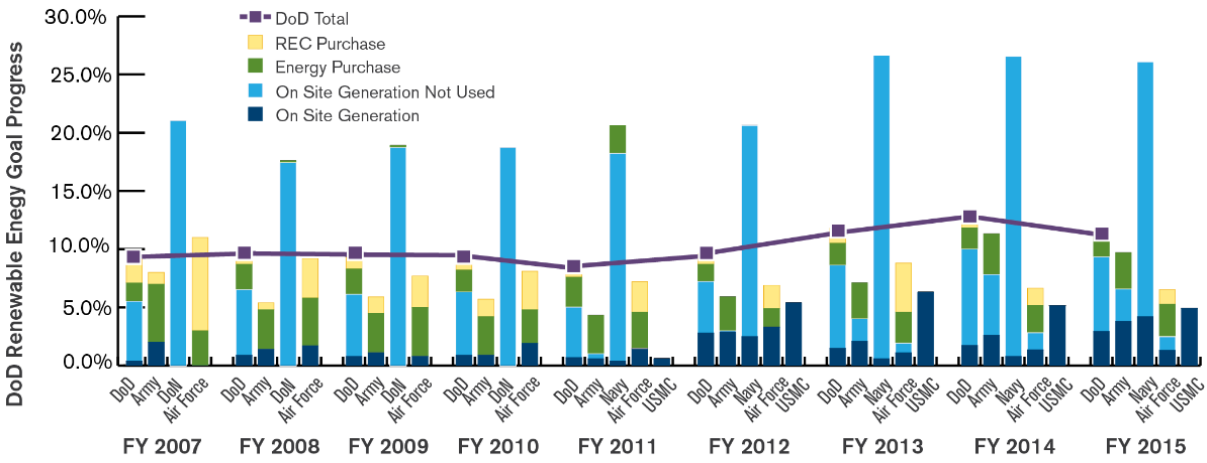
In FY 2015, DoD did not achieve the EPAct goal. Renewable electricity consumption subject to the EPAct 2005 goal accounted for 3.6 percent of DoD's total electricity consumption. This is 3.9 percent below the FY 2015 EPAct 2005 renewable energy goal of 7.5 percent (Figure 4-1).

Figure 4-1: EPAct 2005 Renewable Energy Goal Attainment



DoD continued to make progress in achieving the 10 U.S.C. §2911(e) FY 2018 interim and FY 2025 renewable energy goal (Figure 4-2).

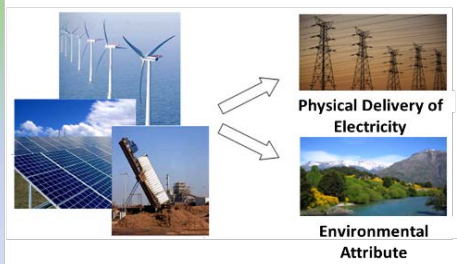
Figure 4-2: 10 U.S.C §2911(e) Renewable Energy Goal



In FY 2015, purchases of Renewable Energy Credits (RECs) fell to 3.0 percent of the total renewable energy contribution toward the 10 U.S.C. §2911(e) goal, down from 3.6 percent in FY 2014. EPAct and 10 U.S.C §2911(e) treat RECs for goal attainment differently. The EPAct goal requires DoD to retain RECs for goal attainment, while retaining RECs is not a requirement to meet the 10 U.S.C. §2911(e) goal.

RECs are a valuable financial tool for the development of large-scale renewable energy projects. RECs are attractive to project developers because they can lower capital (upfront) costs of projects. DoD strives to achieve an acceptable tradeoff between retaining RECs and taking advantage of the full economic benefits of RECs to encourage project development. DoD does not believe that procuring unbundled RECs is a desirable substitute for renewable energy production that provides energy resilience for its military installations. To meet the reporting requirement under title 10, section 2925, Subsection (a) (4), DoD began tracking RECs associated with new third-party financed renewable energy projects in FY 2012.

- ✓ Renewable Energy Credits (RECs), also known as green tags, renewable energy certificates, are tradable, non-tangible instruments that represent the environmental attributes of renewable energy generation. Each REC represents the generation of 1MWh of electricity from an eligible source of renewable energy.
- ✓ RECs may be sold bundled (paired with the physical delivery of electricity), or unbundled (as a stand-alone paper product). When combined with the physical electricity, RECs become functionally equivalent to green power purchases from a local utility.



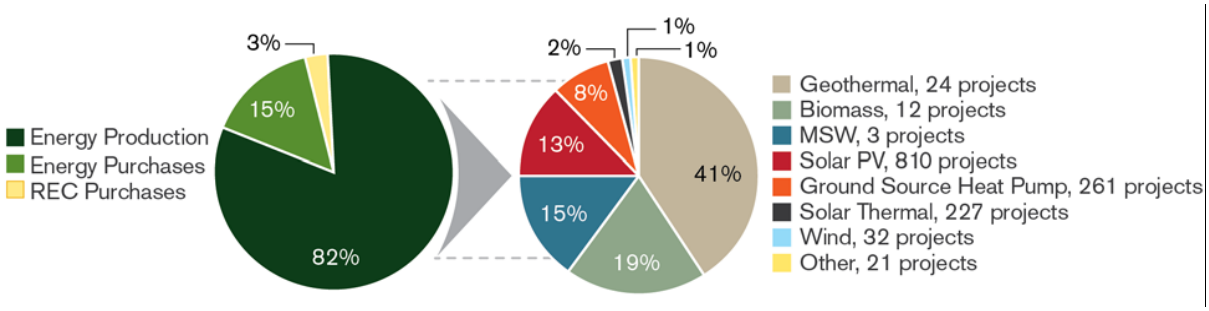
The Department uses various authorities to increase the supply of renewable and other distributed (on-site) sources of energy on its installations. DoD uses both appropriated funds and non-Governmental (often referred to as 'third-party') financing to pursue renewable energy projects. DoD partners with private entities to enable the development of large-scale renewable (or other distributed) energy projects and relies on congressional appropriations to fund cost-effective, small-scale distributed generation projects. The main authorities utilized to pursue third-party financing of renewable energy projects are Utility Service Contracts (USCs), Power Purchase Agreements (PPAs), and outgrants (Table 4-2). Title 10, sections 2922(a) and 2667 are not limited to renewable energy sources and can also be used for non-renewable energy sources such as natural gas and other fuel types. Title 10, section 2410(q) is limited to renewable energy sources.

Table 4-2: Funding Mechanisms

Funding Mechanism	Authority	Definition
Utility Service Contracts (USCs)	10 U.S.C. § 2922(a)	A contract enabling the DoD to enter into agreements for the provision and operation of energy production facilities and the purchase of energy from such facilities.
Power Purchase Agreement (PPA)	10 U.S.C. § 2410q	An agreement enabling the DoD to enter into a contract for the purchase of electricity from sources of renewable energy.
Energy Enhanced Use Leases (EULs)	10 U.S.C. § 2667	An EUL for the production of energy allows an installation to lease land to a lessee in return for cash or in-kind contributions. For renewable energy projects that use the authority found under 10 U.S.C. § 2667, DoD requires that the Military Department demonstrate more than a mere passive activity. For production or procurement of facility energy to qualify as being consistent with the DoD energy performance goals and master plan (and consequently qualify for an energy certification), DoD must do one of the following– • Consumption by the DoD Component of some or all of the facility energy from the project; • Structure the project to provide energy security for the installation by, e.g., retaining the right to divert to the installation the energy produced by the project in times of emergency; • Reinvestment in renewable facility energy or program conservation measures of a minimum of 50 percent of proceeds (including both in-kind and cash) from any lease.

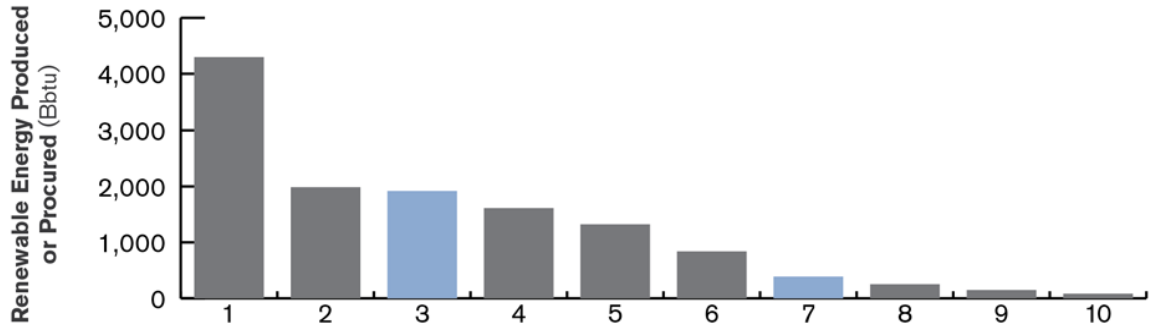
In FY 2015, DoD had over 1,390 operational renewable energy projects, compared to approximately 1,130 reported in FY 2014. The 1,390 projects generated over 10,534 BBtus in FY 2015, which represents 82 percent of the total amount of renewable energy produced or procured. From these projects and with 26 purchases of renewable energy and RECs, which represent 15 percent and 3.0 percent of the total supply mix, respectively, DoD produced and procured approximately 12,837 BBtus of renewable energy in FY 2015. Geothermal electric power is by far the most significant renewable energy source in DoD, accounting for over 41 percent of the Department's renewable energy generation portfolio. Biomass makes up about 19 percent of the DoD's renewable supply mix. Municipal solid waste (MSW) is used for both electricity and steam production, and accounts for 15 percent of the Department's renewable energy production. There are 810 solar photovoltaic (PV) systems throughout DoD that contribute approximately 13 percent of the total renewable energy produced, followed by 261 ground source heat pump (GSHP) projects contributing approximately 8.0 percent to the supply mix. Figure 4-3 illustrates DoD's renewable energy supply mix by technology-type.

Figure 4-3: DoD Renewable Energy Supply Mix by Technology Type in FY 2015



The largest renewable energy project in DoD is the Navy's China Lake geothermal power plant in California. The second largest renewable energy project in DoD is a waste-to-energy project at the Norfolk Naval Shipyard (NNSY) in Virginia that produces both electricity and steam. The largest project to come online in FY15 was the Army's 17.4 MW solar PV facility at Fort Huachuca. DoD Components also continue to implement numerous smaller renewable energy projects. Figure 4-4 shows the breakout of renewable energy projects by source of energy.

Figure 4-4: DoD Renewable Energy Projects in FY 2015



	Renewable Energy Projects	BBtu
1	Geothermal, 24 projects	4,299
2	Biomass, 12 projects	1,985
3	Renewable Energy Purchases	1,916
4	MSW, 3 projects	1,610
5	Solar PV, 810 projects	1,321
6	Ground Source Heat Pumps, 261 projects	839
7	REC Purchases	388
8	Solar Thermal, 227 projects	252
9	Wind, 32 projects	147
10	Other, 21 projects	82

Army

In FY 2015, the Army did not achieve the EPAct renewable energy goal, consuming 1.8 percent of electricity from renewable energy sources. However, the Army increased performance toward the 2911(e) goal, producing or procuring 12 percent of its electricity from renewable energy sources compared to 11.3 percent in FY 2014.

Although the Army added over 40 MW of renewable energy capacity in FY 2015, the total percentage of EPAct eligible renewable electricity decreased from 2.0 percent in FY 2014 to 1.8 percent for FY 2015, whereas the National Defense Authorization Act (NDAA) percent renewable use increased by 0.7 percent. The reduction stems from a concerted Army effort to move from buying green power to deploying generation assets on Army land. Further, 12 renewable energy projects totaling 20 MW capacity (mostly wind turbines and large PV arrays) were offline during FY 2015, and additional sites experienced decreased production output. The Army is actively working to bring these systems back to fully operational status. Despite these challenges, the Army did increase the NDAA percent renewable use by 0.7 percent. Sixty-five new projects came online in FY 2015 with a total of 40.4 MW of generation capacity, the highest total one-year addition in the history of the Army. Most of these projects, though, only produced power for a few months during the reporting period. These projects, coupled with over 160 MW of additional projects expected to come online in FY 2016, forecast continued success for the Army's renewable energy programs.

The Army's approach is to deploy renewable energy projects on Army land vice buying power from offsite is comprehensive and consistent with the energy security goals in the ES^2 Strategy. The Army's approach includes small-scale projects on rooftops or parking areas, as well as large utility-scale systems using Military Construction (MILCON) for new construction and leveraging private financing through available Federal and DoD authorities (Table 5.2). In FY 2015, 37.6 MW of renewable energy projects were financed through a variety of programs that leverage private financing, such as ESPCs, UESCs, PPAs, EULs or General Services Administration (GSA) area-wide utility contracts. Additionally, 2.8 MW of renewable electric generation was awarded through the MILCON ECIP. The Army's investment in all programs will result in a surge in large-scale renewable energy projects in FY 2016. The Army is on track to meet the 1 GW commitment by the end of FY 2025. One key feature of these projects is that all are designed with an on-site power production capacity to enhance energy assurance and resiliency to our installations. The Army has no plans to procure off-site green energy without some form of energy security enhancement. A good example is Fort Drum where 90 percent of the installation's energy needs are met by an on-site third party installed and operated 60 MW biomass plant.

DON

In FY 2015, the Navy did not achieve the EPAct renewable energy goal, consuming 3.4 percent of electricity from renewable energy sources. The Navy's progress against the EPAct renewable goal was 1.9 percent, whereas the Marine Corps exceeded the EPAct renewable energy goal by achieving 9.8

percent of electricity from renewable energy sources—up from the 9.1 percent achieved in FY 2014 and marking the Marine Corps' third consecutive year of exceeding the goal.

DON's performance toward the 2911(e) goal significantly increased, producing or procuring 21.8 percent of electricity from renewable energy sources. Individually, the Navy produced or procured 25.9 percent of its electricity from renewable energy sources, which marks the third time the Navy has achieved the 25 percent target well ahead of the FY 2025 deadline, whereas the Marine Corps produced or procured 5.0 percent of electricity from renewable sources.

DON has made significant strides in achieving the 2911(e) goal due to its focus on large-scale renewable energy projects. The main contributors to the DON's progress toward the 2911(e) goal traditionally have been the geothermal plant at Naval Air Weapons Station (NAWS) China Lake in California and the MSW plant at NNSY in Virginia. Throughout FY 2015, DON identified, developed, and executed significant large-scale renewable projects across Navy and Marine Corps installations in support of achieving the DON's 1 GW goal to supply 50 percent of DON energy demand with alternative sources by 2020. Through the Renewable Energy Program Office (REPO), DON has approximately 300 MW of new renewable generation under contract or signed lease by the end of FY 2015, and the DON had issued requests for proposals (RFPs) for another 650-750 MW of renewable energy via utility contracts, PPAs, and outgrants. The Marine Corps was the first to execute a cost-effective large-scale project with REPO; in February, a real estate outgrant was awarded that resulted in the construction of a 17 MW solar facility at Marine Corps Base Camp Lejeune. The project broke ground in July 2015 and is expected to be online before the end of the calendar year. Other projects under procurement are expected to start coming online during FY 2016 and FY 2017.

Air Force

In FY 2015, the Air Force did not achieve the EPAct renewable energy goal, consuming 6.2 percent of electricity from renewable energy sources. The Air Force did increase its consumption from renewable sources by 0.5 percent from FY 2014 as renewable electricity usage increased to 369,102 megawatt-hours (MWh) in FY 2015 from 292,621 MWh in FY 2014, a 26 percent increase. In FY 2015, the Air Force progress toward the 2911(e) goal of producing or procuring 25 percent of its total electricity from renewable energy sources by FY 2025 increased slightly to 6.9 percent, up from 6.7 percent in FY 2014.

Although replacement RECs are permitted, in FY 2015 Air Force policy precluded the purchase of RECs to reach renewable goals. On-base electricity capacity increased to 104.3 MW in FY 2015 from 102.8 MW in FY 2014. Air Force performance toward the 10 USC 2911(e) goal was 6.9 percent, including both electric and non-electric renewable energy, versus 6.7 percent in FY 2014. Similarly, in FY 2015 renewable energy usage from both electric and non-electric equivalent increased by 5.0 percent to 635,279 MWh from FY 2014 levels.

Opportunities to incorporate renewable energy generation on installations continue to be a major focus for the Air Force. An example of this is the development and construction of the Air Force's largest solar

project, a 19 MW array at Nellis AFB, NV. Combined with the existing 14.2 MW solar PV array, renewable energy accounts for 38 percent of total energy usage at the installation. A 16.4 MW solar PV array was also constructed at Davis Monthan AFB, AZ using a third-party PPA contract mechanism. In addition, a 3.4 MW wind project was constructed at Cape Cod AFS, MA using ECIP project funds.

In FY 2015, a Notice of Intent to Award a contract (NOITA) was issued for a 6+ MW capped landfill solar PV project at Otis Air National Guard Base (ANGB), located on Joint Base Cape Cod, MA. A NOITA was also issued for a 20+ MW solar PV project at Vandenberg AFB, CA. Both projects will be funded using the third-party PPA contract model with an associated land lease. The installations will purchase the power generated from the arrays and expect to be operational before the end of 2016.

In FY 2016, AFCEC plans to release five PPA solicitations, including a 5.4 MW waste-to-energy project at Dyess AFB, TX; a 5 MW solar PV project at Holloman AFB, NM; a 10 MW solar PV project at Joint Base MacGuire-Dix-Lakehurst (JBMDL), NJ; a 5 MW solar PV project at Laughlin AFB, TX; and a 10 MW solar PV project at Hanscom AFB, MA. Also, AFCEC plans to sign EULs for a 30 MW solar PV project at Eglin AFB, FL, and a 13 MW Solar PV project at JBMDL-Dix, NJ, combined with a 17 MW Solar EUL project at JBMDL–Lakehurst, NJ.

At the end of FY 2015, the Air Force had 311 renewable energy projects on 104 sites, either in operation, or under construction, using a variety of project delivery methods including PPA, EUL, ECIP, and MILCON.

The Air Force Renewable Energy Project Development (REPD) Subpanel was established to leverage knowledge and resources across the Air Force and coordinate renewable energy efforts. The Air Force expects that REPD's Subpanel will provide leadership for and coordination of renewable energy projects by providing a forum, process, and tools for evaluation and decision-making.

Defense Agencies

The Defense Agencies continue to implement renewable energy projects on their facilities. In many cases, Defense Agencies operate in buildings rather than campuses or installations, limiting their ability to implement renewable energy projects. However, Defense Agencies continue to consider cost-effective, small-scale, and distributed renewable energy generation. Specifically, the following are initiatives Defense Agencies undertook in FY 2015:

- DIA's primary renewable energy initiative in FY 2015 was to construct a 500 KW roof-mounted solar PV array, which will be completed in early FY 2016, as part of the ESPC. This solar PV array will greatly increase DIA's use of renewable energy. Under the terms of the ESPC, DIA will purchase power generated by the solar panels from the ESPC contractor at a price competitive with grid electricity.
- DeCA has significantly invested in test wells for geothermal and other investigation and analysis in support of self-generated renewable energy projects. Since none of these efforts have

demonstrated an acceptable return on investment, DeCA had no self-generated renewable energy projects in FY 2015.

- NSA recently commissioned both South and North Campus Utility Plants, which maximized the potential of the available roof space by accommodating a combination of solar PV panels and a vegetative roof. Other projects in the planning and design phases will also incorporate renewable energy features to the extent practicable.
- NRO purchased RECs representing 60 million kilowatt-hours of renewable energy—roughly 20 percent of the NRO's total electric consumption—in FY 2015.

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5. Enhancing Energy Resilience

Per DoDI 4170.11, **energy resilience** *is the ability to prepare for and recover from energy disruptions that impact mission assurance on military installations.*

The Department must be prepared for and have the ability to recover from utility disruptions that impact mission assurance on its installations. DoD relies on commercial power to conduct missions from its installations, and these commercial power supplies can be threatened by natural hazards and other events. DoD recognizes that such events could result in power outages affecting critical DoD missions involving power projection, defense of the homeland, or operations conducted at installations in the U.S. directly supporting warfighting missions overseas. Therefore, it is critical for installation commanders to understand the vulnerabilities and risk of power disruptions that impact mission assurance.

DoD is pursuing a three-pronged strategy to ensure installations have resilient, available, reliable, and continuous power. First, two elements of the facility energy strategy are essential components to improving energy resilience: reducing the installation's demand for energy and expanding the supply of distributed (on-site) energy sources. Second, DoD is actively addressing near-term concerns by (1) pursuing energy resilience initiatives to prepare for and recover from energy disruptions that impact mission assurance on its installations; and (2) actively engaging with Federal agencies, state and local governments, and key industrial players to remediate risk to DoD missions associated with commercial utility outages. Third, DoD is addressing longer-term concerns by pursuing advanced technologies that will help enhance the energy resilience of its installations. DoD publishes the status of its energy resilience program at the following: http://www.acq.osd.mil/eie/IE/FEP_Energy_Resilience.html.

Reporting Requirements

Title 10 U.S.C §2925(a)(11) requires the reporting of utility outages at military installations. The following discussion addresses 10 U.S.C. §2925(a)(11).

In FY 2015, DoD conducted a survey of utility outages on military installations resulting from external, commercial utility interruption of its electric, gas, and water utilities. DoD Components reported approximately 127 utility outages that lasted eight hours or longer in FY 2015, an increase from the 114 events reported in FY 2014. The majority of the utility outages were a result of electric disruptions, and included U.S. and overseas locations. The financial impact of these utility outages was approximately $179,087 per day.[16]

Table 5-1 shows the average cost of utility outages per day for data collected from FY 2013 to FY 2015.

[16] This figure is developed from utility outages that had reported financial impacts in FY 2015.

Table 5-1: FY 2012 – FY 2015 Cost Per Day of DoD Utility Outages[17]

Cost of Utility Outages ($000/day)		
FY2013	FY2014	FY2015
$225	$246	$179

These utility outage costs could be incorporated into business case and cost-benefit decisions when pursuing energy resilience projects. However, business case and cost-benefit decisions should not be limited to the cost avoidance of remediation actions associated with utility outages. DoD is continuing to identify other benefits associated with enhancing energy resilience. These benefits will consider a levelized cost of electricity approach that encourages more strategic, life-cycle cost effective energy generation solutions. For example, a levelized cost of electricity approach would quantify costs associated with traditional standby generators, maintenance, fuel, infrastructure, and equipment compared to more resilient, integrated, distributed energy generation systems and infrastructure. Further, the value and duration of utility outages does not include financial benefits associated with peak shaving, demand response, or ancillary services markets. DoD also could generate financial benefits from integrated, on-site energy generation systems while improving its energy resilience.

In FY 2015, the OASD(EI&E) commissioned a study to investigate business case analysis approaches for energy resilience with the Massachusetts Institute of Technology – Lincoln Laboratory (MIT-LL). An important objective of the study is to identify energy projects that improve energy resilience and are cost effective on military installations. The study will consider broad, cost-effective energy resilience solutions to improve mission assurance on military installations.

In FY 2015, the mitigation associated with DoD utility outages include updating infrastructure, increasing servicing efforts with the local utility, and pursuit of emergency or redundant power supplies such as incorporating backup generators. These utility outages were caused by acts of nature, equipment failure, or planned maintenance. No malicious acts (e.g., physical, cyber) were reported as causing utility outages impacting installations in FY 2013, FY 2014, or FY 2015. In FY 2015, equipment failure (e.g., reliability or mechanical issues) accounted for over half of the reported utility outages, while the remaining outages were caused by planned maintenance or acts of nature (e.g., weather, storms) (Figure 5-1). The June 2012 derecho storms and Hurricane Sandy (in FY 2013) contributed to a larger proportion of outages resulting from natural events. In FY 2014, the majority of outages resulted from reliability concerns (equipment failure) since there was not a major natural event. Similar to FY 2014, in FY 2015 the majority of outages occurred due to reliability concerns and limited acts of nature.

[17] These figures are developed from utility outages that were reported with financial impacts in FY 2012, FY 2013, FY 2014, and FY 2015.

Figure 5-1: FY 2015 Utility Outages by Cause

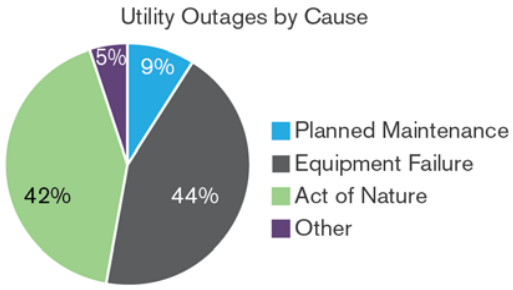
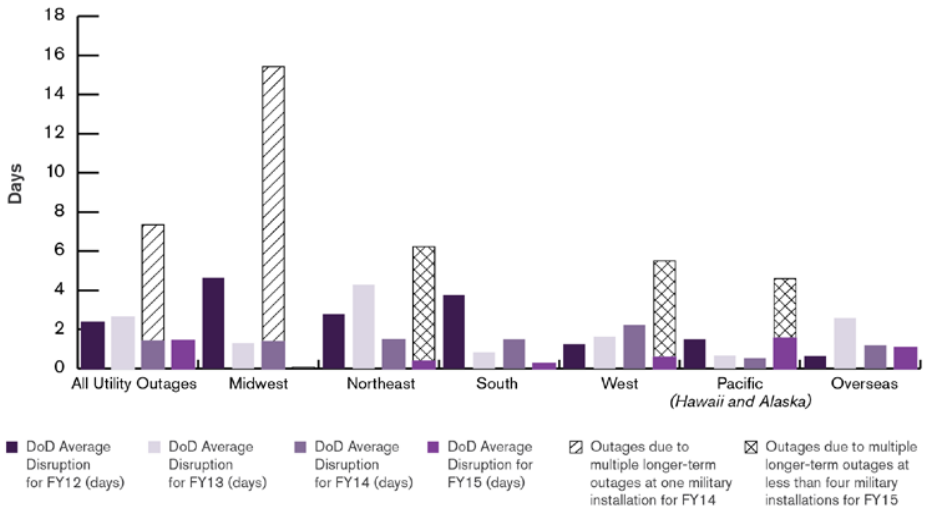


Figure 5-2 captures the average disruption time across the 127 reported utility outages by region (in days) from FY 2012 – 2015. In FY 2015, the average disruption time for all utility outages was 1.4 days. Although average outage duration significantly decreased from FY 2014, overall outages increased, primarily at two military installations. As in FY 2014, there were also several large outliers that skewed average outage duration significantly upward, primarily equipment failures at four military installations.

Figure 5-2: Average Time for Utility Outages by Region—FY 2012 to FY2015[18]



The 10 U.S.C. §2925 and Committee on Appropriations Senate Report 113-473 analysis results help support on-going power resilience initiatives that address near-term concerns associated with acts of nature, equipment failure, and planned maintenance. Further, these results provide some clarity that the majority of utility disruptions are of lower duration, but that there are targeted instances where natural or reliability issues have caused greater duration outages and sometimes costly remediation

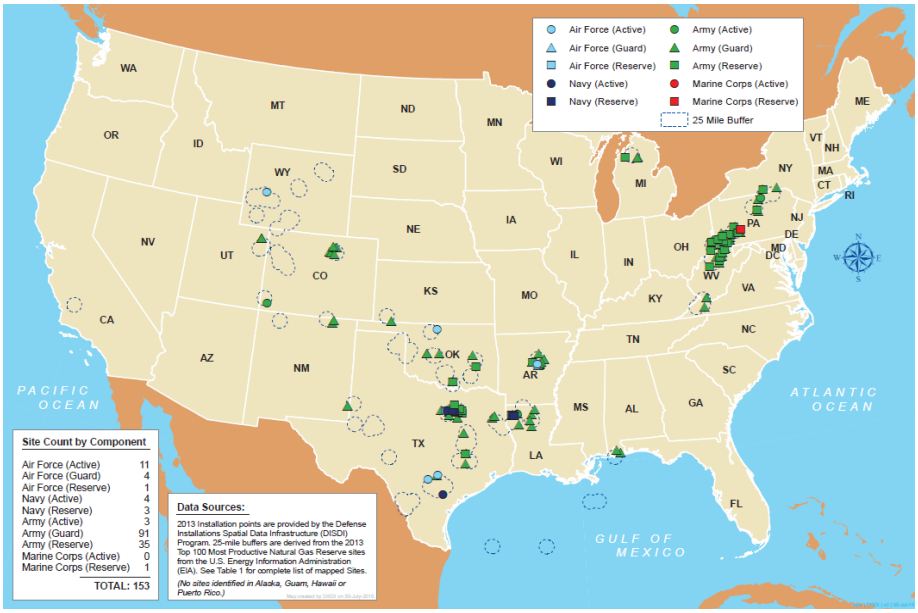
[18] Regions used align to those established by the U.S. Census Bureau. The Pacific division was separated out of the West region for analysis purposes. Census regions and divisions of the U.S. can be found at the following: https://www.census.gov/geo/maps-data/maps/pdfs/reference/us_regdiv.pdf.

actions. The current status of DoD's energy resilience initiatives will be discussed further in the following section.

Other Reporting Requirements

Senate Armed Services Committee Report 114-79 accompanying the National Defense Authorization Act (NDAA) for FY 2016 requests an analysis of domestic DoD installations that are likely on gas and oil reserves. The DoD does not maintain an inventory of gas and oil reserves. Oil and gas under Federal lands are managed by the Department of the Interior under its statutory programs. DoD has no authority to exploit such resources. DoD was able to generate information on military installations and sites that were within 25 miles of the top 100 most productive natural gas reserves. Natural gas reserve data is not maintained by DoD and was generated by use of data from the Energy Information Agency. The below map provides military installations or sites which are within 25 miles of the top 100 most productive natural gas reserves, but it is not known whether a gas reserve is physically on these military installations or sites.

Figure 5-3: Military Installations within 25 Miles of 100 Most Productive Natural Gas Reserves



Exploitation of oil and gas reserves on DoD installations can have a detrimental impact upon the use of the installations. Such exploitation is not generally beneficial to DoD both because it can interfere with the use of the surface estate and because DoD receives no monetary benefit from the royalty payments to address the costs of such interference. There are specific instances where exploitation of oil or gas reserves on or near a DoD installation may provide benefit and such instances are considered on a case-by-case basis.

Addressing Key Near-Term Concerns

Energy Resilience Initiatives

OASD(EI&E) is leading energy resilience initiatives to ensure that the DoD has the ability to prepare for and recover from energy disruptions that impact mission assurance on military installations. Further, energy resilience encourages the necessary planning and capabilities to ensure available, reliable, and quality power to continuously accomplish DoD missions. DoD continues to pursue a number of initiatives to enhance the energy resilience of its military installations.

From January 2014 to August 2014, DoD continued to lead its power resilience initiative by examining installation adherence to key energy resilience policies. As a result of the review, DoD found that several policies already exist for providing guidance to Components and installation commanders to ensure energy resilience of military installations.

From March 2015 to March 2016, DoD pursued and completed its update on installation and facility energy policy that will help raise awareness and prioritize important energy resilience requirements. This update will assist Components to better align energy requirements with critical DoD missions, encourage integrated and holistic energy solutions beyond typical standby generators, and support continued performance to already existing requirements. Energy resilience requirements include the appropriate sizing of energy generation systems as well as maintenance, fueling, and testing of energy generation systems. DoD is now pursuing implementing guidance to this instruction.

Strategic Partnerships

DoD continues to build on its energy resilience partnerships with other Federal departments and agencies, and with the private sector. DoD is supporting the DOE in developing ways to ensure the resilience of power transformers and other critical equipment. Collaboration with utility providers and state and local emergency management agencies remains a central focus to enhance the resilience and rapid restoration of commercial grid infrastructure that supports mission critical installations and facilities.

DoD will continue developing and implementing prioritized risk mitigation and remediation plans for its Defense Critical Infrastructure based on assessed criticality, vulnerability, and threats and hazards. The Department will continue developing and maturing public-private partnerships and executing programs and initiatives that enhance DoD's resilience and ability to execute its critical missions, even in a disrupted or stressed commercial electric power environment.

Addressing Key Long-Term Concerns

Overview of Installation Energy Test Bed Efforts

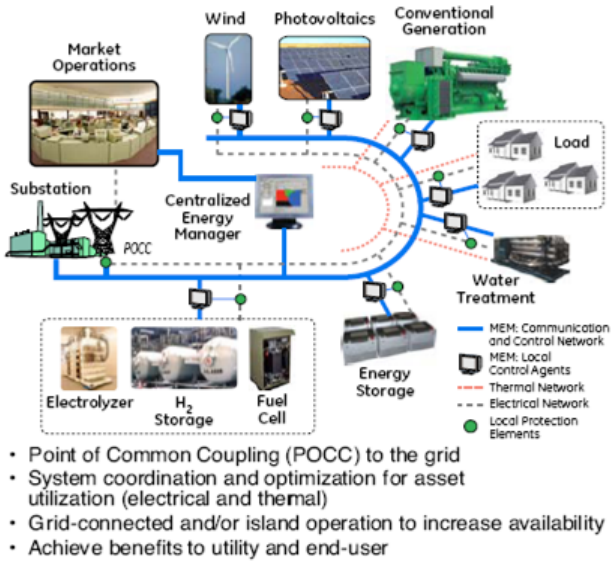
The ESTCP Installation Energy Test Bed is a cost-effective way to demonstrate new energy technologies in a real-world, integrated building environment to reduce risk, overcome barriers to deployment, and facilitate wide-scale commercialization. Emerging technologies offer a cost-effective way for DoD to reduce its facility energy demand, increase energy surety, and provide distributed generation and storage.

Projects include rigorous operational testing and assessment of life-cycle costs of new technology while addressing DoD-unique issues. DoD can be a sophisticated first user of successful cutting-edge, transformational energy technologies. The Installation Energy Test Bed funds microgrid and advanced installation energy management technology demonstrations to evaluate the benefits and risks of various approaches and configurations. Through a competitive selection process, the Installation Energy Test Bed has undertaken projects with multiple vendors to ensure that the Department can capture the benefits of diverse approaches. More information on the ESTCP is available at http://www.serdp.org/.

Next Generation Microgrids

Smart microgrids and energy storage offer a more robust and cost-effective approach to ensuring installation energy resilience than the traditional approach of backup generators tied to single critical loads and (limited) supplies of on-site fuel. Although microgrid systems are in use today, they are relatively unsophisticated, with limited ability to integrate renewable and other distributed energy sources, little or no energy storage capability, uncontrolled load demands, and "dumb" distribution that is not optimized.

Figure 5-4: Microgrid System Example



Advanced microgrids reduce installation energy costs on a day-to-day basis by allowing for load balancing and demand response, as well as offering DoD a pathway to participate in ancillary service markets, all of which can make holistic energy management more cost-effective. They also facilitate the incorporation of renewable and other on-site energy generation. More importantly, they offer energy resilience: the combination of on-site energy generation and storage, together with the microgrid's ability to manage local energy supply and demand, allow installations to operate in

"islanded" mode, shedding non-essential loads and maintaining mission-critical loads if the electrical grid is disrupted (Figure 5-3[19]).

Fort Bliss, Texas

An integrated system of energy assets under central microgrid control can provide power that is cost-effective, cleaner, and more secure than traditional operations. The project at U.S. Army Brigade Combat Team complex at Fort Bliss, TX, is demonstrating the benefits of such an intelligent microgrid tied to existing energy assets. An important aspect of the project is demonstrating both grid-tied and grid-independent operation, providing additional power in times of high energy demand and exhibiting the system's ability to maintain power to critical operations in the event of losing a major power source. It will also test the ability of the microgrid technology to supply peak power and reduce GHG emissions and overall energy consumption. Planning tools allow power engineers to design a microgrid, determining the optimal arrangement and control of the distributed energy assets and loads. Controllers at each piece of equipment react automatically to ensure power delivery, quality, and safety. Optimization algorithms set points to operate equipment for energy efficiency and resilience. This demonstration paves the way for the implementation of this technology at a wider range of DoD facilities.

Marine Corps Air Ground Combat Center (Twenty-nine Palms, California)

DoD is transforming the electrical infrastructure of Marine Corps Air Ground Combat Center (MCAGCC) Twenty-nine Palms, CA, the Nation's largest Marine Corps Base, to enable it to operate off the commercial power grid when needed. The remote base in the Mojave Desert serves a population of more than 27,000 military and civilian personnel who facilitate large-scale training and exercises. The austere conditions, limited infrastructure, and required continuity of operations place a heavy demand on the base's electrical infrastructure. The base sustains its mission with more than 10 MW of power generated on-site by a 1.2 MW solar PV farm, 1 MW of solar PV shading (canopy), a 0.5 MW fuel cell, and a 7.2 MW co-generation plant. The base is tying together its disparate electrical infrastructure in an optimal way while serving as a test bed for new technologies.

In an initial demonstration, a central control system will enable facility managers to adjust the demand for electricity from buildings and substations, while dropping demand from warehouses and temporary trailers, to optimize the local system. A second phase will measure and improve the quality of the electricity flowing across the microgrid. A third phase will integrate a Sodium-Metal-Halide Battery, which can function in the extreme desert climate of Twenty-nine Palms, to help alleviate renewable energy intermittency, improve island-mode operations if the main grid goes down, reduce expensive "demand charges," and reduce stress on the main transformers and other electrical equipment on base.

[19] GE Global Research, Bringing the Smart Grid to Military Bases [online source] (accessed July 1, 2012), available on the internet at http://ge.geglobalresearch.com/blog/bringing-the-smart-grid-to-military-bases/

Los Angeles AFB

A demonstration just getting underway at LAAFB is focused on showing the cost-effective use of DoD resources in the evolving electrical power market place, in addition to the energy resilience benefits of microgrids. This demonstration centers on medium duty PEVs. The fast-responding energy storage capability of vehicle batteries can provide power to help satisfy building, local base, and wider grid services. Although vehicles individually are not large electricity loads or sources, when aggregated they can become a controlled entity able to offset the effects of variable local resources and loads. Vehicle charging can be costly if not managed well in relation to the prevailing utility tariff. The V2G technology involves optimizing charging times, enabling V2G integration, and partnering with the local utilities provider to exploit new ancillary service markets. This model has the potential to reduce the incremental cost of electric vehicles, in addition to providing the energy resilience benefits of V2G operation.

Smart Power Infrastructure Demonstration for Energy Reliability and Security (SPIDERS)

U.S. Pacific Command and U.S. Northern Command are finalizing SPIDERS, a co-sponsored Joint Capability Technology Demonstration (JCTD), in partnership with DOE and the Department of Homeland Security (DHS). The purpose is to demonstrate a cyber-secure smart microgrid architecture with the ability to maintain operational surety through secure, reliable, and resilient electric power generation and distribution. Using a three-phase approach with increasing levels of system complexity, the SPIDERS JCTD will culminate in the first DoD installation-wide microgrid featuring integrated smart grid technologies, distributed and renewable generation, energy storage, and cyber defenses with the ability to operate autonomously in an "islanded" mode for extended periods of time. The deployment of cyber-secure smart microgrids on military installations will not replace commercial power as a primary source, but will enable secure, sustainable backup power for critical missions, with enhanced reliability and endurance, at the installation scale. The results of the demonstration will help inform infrastructure investment decisions to reduce the mission risk of extended electric power outages at installations, enhancing mission assurance for DoD units and potentially assisting surrounding civilian communities in disaster recovery efforts.

During Phase 1, at Joint Base Pearl Harbor-Hickam, HI, an Operational Demonstration (OD) was completed in January 2013, culminating in the construction and system integration of an electric microgrid with advanced industrial controls and dynamic load management. Phase 1 resulted in a 39 fold increase in power reliability, a 42 percent reduction in emissions, 30.4 percent diesel fuel savings, and up to 90 percent renewable energy penetration. Phase 2 construction at Fort Carson, CO, was completed in August 2013. The OD was conducted in October 2013, during which the Fort Carson microgrid operated successfully through a simulated grid outage, integrating three existing diesel generators, a solar array, and the first ever application of electric utility trucks for V2G distributed backup generation and storage. Phase 3, Camp Smith, HI, the final phase of the JCTD completed the OD in January 2016. Based on system performance, dispatcher (operator) responses, and cyber security assessments, the OD was a success. This was the first completely "always on, always sensing,"

"islandable," and cyber-secure DoD military installation microgrid. The array of infrastructure assets, included office buildings, housing units, solar energy generation, energy storage, and distributed generators. SPIDERS greatly enhanced mission assurance, energy reliability and resiliency, and proved parallel capability with the local utility for future economic advantages.

The DON, NAVFAC Engineering and Expeditionary Warfare Center (EXWC), as Transition Manager, transitioned the microgrid solutions to both the Federal Government and industry. This transition has been provided for all three phases through updates to Unified Facilities Criteria (UFC), a "Technology Transition Consolidated Report" and an Industry Day.

Industrial Control Systems

Commercial electric power providers rely on industrial control systems (ICS), which include supervisory control and data acquisition (SCADA) systems, distributed control systems (DSC), and other control system configurations, such as skid-mounted programmable logic controllers (PLC). ICS are also distributed in commercial and Government building equipment, such as air conditioners, utility meters, and programmable controllers equipped with embedded computing devices. Used by commercial entities and DoD, this equipment is often specified without regard to cyber security considerations and have become increasingly networked, interconnected, and mutually dependent and are, therefore, potentially at risk of cyber intrusion or attack.

Focusing on relevant security specifications, DoD, in collaboration with DHS, DOE, and the National Institute of Standards and Technology (NIST), is involved with the development of the "Guide to Industrial Control System Security" (NIST SP 800-82), which includes a specialized ICS Security Overlay applicable to all types of control systems: utilities, facilities, weapons, medical devices and equipment, security, and transportation. Simultaneously, DoD is in the process of adopting the NIST Risk Management Framework that levies the same level of protection and continuous monitoring security requirements for both IT systems and ICS. DoD is working with the ICS community to develop new procurement language, devices, patches to existing equipment, and upgrades to information technology security measures. Working with appropriate DoD entities, such as U.S. Cyber Command and Service Cyber Commands, DoD is proactively moving ahead by fielding and deploying secure ICS solutions at DoD installations and is sharing those solutions with other appropriate ICS stakeholders in the field of logistics, security, medical, transportation, and the defense industrial base.

Service Initiatives

Army

The Army recognizes the growing importance of obtaining energy resilience on its installations and continues to work with various entities throughout the DoD to achieve this goal. During FY 2015, the Army's energy resilience efforts associated with ES^2 Strategy implementation were accelerated through an Energy Security Integrated Process Team (ESIPT) to work across organizations to inform decisions.

The ESIPT focuses on energy resiliency for installation critical infrastructure, bringing together leadership at all levels of the Army as well as several stakeholder organizations dedicated to information technology, finance, and facility management.

The Army has completed Energy Security Assessments (ESAs) at several key Army installations to develop a baseline and detailed technical understanding of vulnerabilities from natural and man-made threats and to identify potential failure points in energy infrastructure. The ESAs also provide project recommendations to address these vulnerabilities and at some sites include microgrid conceptual designs. In FY 2015, the Army completed an ESA and microgrid conceptual design at Fort Irwin, CA, and initiated an ESA at Fort Huachuca, AZ. Tooele Army Depot, UT, used ECIP funds to continue its microgrid project, scheduled for completion in FY 2016.

The Army continues to look at alternative solutions such as microgrids and renewable energy. By using both UESC and ECIP project funds, the Army anticipates building a microgrid capable of meeting 100 percent of the load at Fort Hunter Liggett. The Army is also making microgrid investments at Fort Bliss, Fort Sill, and Fort Carson.

DON

The Navy energy vision identifies ends, ways, and means for increasing energy resilience. The Navy increases shore energy resilience by decreasing overall energy consumption, increasing the energy efficiency of shore systems, increasing the use of viable alternative energy sources, and increasing the reliability of energy for critical infrastructure. Additionally, the Navy mitigates vulnerabilities related to the electric grid, including power outages caused by natural disaster, accident, and physical and cyber-attack, in partnership with local utility providers.

The Navy values energy as a strategic resource with its security being fundamental to executing missions both afloat and ashore. NAVFAC has embarked on a comprehensive evaluation of utility infrastructure to determine current conditions and costs for necessary upgrades to avoid risk. Additionally, the NAVFAC EXWC awarded a $2.7 million contract in 2013 to build a Microgrid Test Facility at the Mobile Utilities Support Equipment (MUSE) Yard in Port Hueneme, CA. The facility will enable the Navy to conduct specific and controlled testing of microgrid concepts and components prior to field deployment.

The Navy instituted an enterprise-wide energy management program in FY 2012 to provide necessary oversight of the shore energy program and to address risks to critical infrastructure and mission-critical utility infrastructure. The Energy Resiliency Program Plan defines the means, methods, and schedules to assess risks, develop mitigation solutions, and identify program funding for risk remediation projects at facility, pier, and adjacent municipal support activities for Navy-critical electric and utility infrastructures. NSWC's Mission Assurance Division (MAD), in cooperation with the NAVFAC EXWC, leads assessment and solutions development efforts under the Energy Security Audit Program (ESAP) to provide recommendations for project development. Under this program, the Navy conducted five installation assessments in FY 2013. Currently under review, reports detail mitigation solutions that

increase critical utility system infrastructure resilience and provide installations with reliable power supply. Following review, refined solutions will be provided to the appropriate command elements for project development. There are currently four ESAP assessments scheduled for FY 2014.

The Navy partnered with the Marine Corps to generate a set of top-level requirements resulting in the Navy and Marine Corps Smart Grid Capabilities Development Document (CDD), promulgated in FY 2013. The goal of the Smart Grid Program is to improve day-to-day operations of building and utility management in a cyber-secure environment in order to save operation and energy costs and support mission assurance.

In FY 2015, Navy had 47 reported utility outages caused by commercial utility interruption of electrical utilities or water impacting the installation(s) for eight hours or longer; there were no outages reported related to gas, steam, or other utilities. In a reverse from last year's pattern, 85 percent of the reported outages occurred outside of the continental U.S. Equipment failure was the leading cause of outages, followed by acts of nature. No outages were reported as the result of malicious acts. In most cases, the financial impact of an outage could not be estimated.

Air Force

The Air Force is always working to improve its ability to manage energy supply and demand in a way that enhances mission capability and readiness, while helping address the Nation's broader energy challenges. The Air Force is working through integrated efforts with DoD, as well as local, regional, state, and Federal partners to address energy resilience at Air Force installations. Transforming the way installation energy is utilized—including investing in innovation, continuation of energy efficient goals and initiatives, and building an energy resilient force—is critical to ensuring the Air Force is equipped to sustain mission priorities of today while planning for the challenges of the future.

Installation energy resiliency is complex and each priority under this strategy is part of the Air Force's total systems approach to improve energy resiliency. The application of energy resiliency differs among operations as dictated by mission need and varies by the function supported, criticality of the mission, and the time of need or phase of operation. The Air Force is continually identifying the energy requirements for each mission, understanding the options, and developing and exercising response plans that contribute to a ready energy posture. By reducing the energy needed and diversifying generation and distribution options, the Air Force relies less on an already vulnerable electrical grid system. An example of these efforts is currently underway at Buckly AFB, CO, where 460 Space Wing and their Civil Engineer Squadron (CES) are making significant mission platform and infrastructure improvements for a special operations facility with the help of the Air Force Installation and Mission Support Center (AFIMSC), Detachment (Det) 1 and AFCEC. Without increasing the current number of electrical feeders supplying power to the installation, AFIMSC Det 1 and AFCEC have provided plans to re-engineer the base's electrical service, subsequently providing a more reliable electrical system to service the facility. Additionally, the Wing and CES are now working together on configuration management of the facility mission platforms to ensure necessary redundancy of the missions.

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6. Data Management and Metering

As the Department continues to improve its energy efficiency, accurate, real-time facility energy data is essential to provide a basis for effective enterprise and installation energy management. In April 2013, the OASD(EI&E) issued a utilities metering policy that sets an aggressive goal for deploying advanced meters throughout DoD to automatically and accurately measure electricity, natural gas, water, and steam use. In addition, the OASD(EI&E) intends to publish strategy and policy to help Components leverage meter data to identify savings opportunities, prioritize investment decisions, and more effectively manage their building energy use at the installation and enterprise levels.

Progress Toward Energy Metering Goals

Section 543 of NECPA (42 U.S.C. § 8253) required Federal agencies to install electricity meters on all Federal buildings by FY 2012, and the same level of natural gas and steam meters installed by FY 2016, with advanced meters installed to the maximum extent practicable. DoD Instruction (DoDI) 4170.11 expands on this, requiring that electricity, natural gas, and water meters be installed on all appropriate[20] facilities by FY 2012 (Table 6-1). The DoDI also requires installation of meters in conjunction with all MILCON, major renovation, and ESPC projects.

Table 6-1: Metering of Appropriate Facilities – FY 2015

Utility	Cumulative # of Buildings, Standard Meters	Cumulative # of Buildings, Advanced Meters	Total % Appropriate Buildings Metered
Electricity	16,975	39,525	100%
Natural Gas	7,249	11,013	78%
Water	2,409	4,398	40%
Steam	1,092	649	100%

DoD's utilities metering policy requires advanced meters on individual DoD-owned facilities sufficient to accurately capture a minimum of 60 percent of electricity and natural gas use with a goal of collecting 85 percent use at the Component level by the end of FY 2020. In FY 2015, DoD captured 23 percent of electricity and 10 percent of natural gas consumption through an advanced metering system (AMS), increases of 4.0 percent and 3.0 percent from FY 2014, respectively. DoD reported that 195, or 23 percent, of installations had installation-level advanced meters for electricity and 104 installations, or 10 percent, had installation-level advanced meters for natural gas (Table 6-2).

[20] Appropriate facilities are those for which the DoD Component has determined metering would be cost-effective and practical. Cost practicality is determined by each individual Service or Defense Agency.

Table 6-2: Electricity and Natural Gas AMS Progress

Commodity	Total Consumption (BBTU)	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Installations with Installation-level Advanced Meters	% Installations with Installation-level Advanced Meters
Electricity	100,203	22,655	23%	195	28%
Natural Gas	65,197	6,364	10%	104	15%

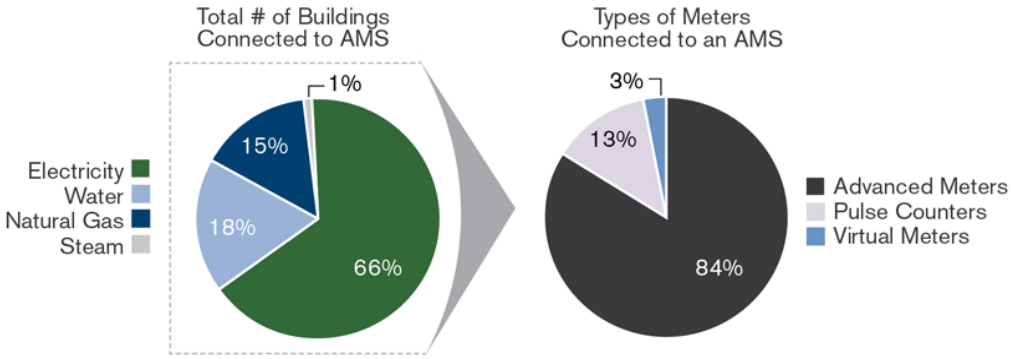
DoD's metering policy also outlines the requirements for the Components to install advanced meters on all water-intensive facilities to measure both potable and non-potable water use, and steam meters on facilities connected to district steam systems to identify steam use and system losses. Table 6-3 shows that DoD-wide, 20 percent of water intensive facilities and 4.0 percent of facilities connected to a district steam system have meters connected to an AMS.

Table 6-3: Water and Steam AMS Progress

Commodity	Total Consumption (BBTU)	Water Consumption Captured by an AMS	% Water Captured by an AMS	Number of Water Intensive Facilities (Water) or Facilities Connected to District Steam System (Steam)	% of Water Intensive or Steam Connected Facilities Metered
Water	70,719,001	4,543,596	6%	137	20%
Steam				26	4%

Figure 6-1 illustrates the percentage of buildings with meters connected to an AMS by utility-type: The figure shows that 66 percent capture electricity use, 18 percent capture water use, 15 percent capture natural gas use, and 1.0 percent capture steam use. Of the total number of meters connected to an AMS, 84 percent are advanced meters, 13 percent are pulse counters, and the remaining 3.0 percent are virtual meters.

Figure 6-1: Breakdown of AMS Meters



Army

The Army issued its metering implementation plan in response to DoD's metering policy. The plan will result in the direct measurement of 65 percent of total energy consumed by Army facilities across advanced electric, water, gas, and steam meters. The Army has installed electric meters in over 16,944 buildings through its Army Central Meter Program, execution of ESPCs, and UP—3,800 of which are connected to Army's Meter Data Management System (MDMS). The Army has also installed over 5,074 natural gas meters, 126 steam meters, and over 2,940 water meters.

Table 6-4 shows the percentage of installations with advanced meters and the percent of energy captured by an AMS as required by the DoD metering policy. Table 6-5 shows the total number of metered buildings, both with meters connected to an AMS and those currently not connected.

Table 6-4: FY 2015 Army Metering Profile

Commodity	Total Consumption (BBTU)	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Installations with Installation-level Advanced Meters	% Installations with Installation-level Advanced Meters
Electricity	29,449	4,554	15%	111	78%
Natural Gas	19,427	2,889	15%	80	56%

Commodity	Total Consumption (BBTU or Thou Gal)	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Water Intensive Facilities (Water) or Facilities Connected to District Steam System (Steam)	% of Water Intensive or Steam Connected Facilities Metered
Water	23,829,800	368,700	2%	75	52%
Steam				7	5%

Table 6-5: FY 2015 Army AMS Progress

Commodity	Total Number of Metered Buildings Connected to AMS		Total Number of Metered Buildings not connected to AMS
	Advanced Meters	Other	
Electricity	9,840	878	6,226
Natural Gas	2,390	956	1,728
Water	1,523	238	1,179
Steam	89	3	34

DON

In FY 2015, advanced metering systems captured over 50 percent of DON total electricity consumption, up from 24 percent of total electricity in FY 2014 (Table 6-6). The intended objectives of DON's Advanced Meter Infrastructure (AMI) Program are to capture an estimated 85 percent of the electrical and natural gas consumption, as well as all facilities connected to district steam systems and water-intensive facilities at installations worldwide.

The Navy is developing enterprise-wide software and integrated metering systems to collect and pay utility invoices, allocate consumption and bills to tenants, and incorporate metered data in a centralized and accessible database. The Comprehensive Utilities Information Tracking System (CIRCUITS) enables energy managers to oversee the review of utilities allocation, consumption, and cost data at a facility level. This will allow management to make more informed energy decisions using real data. Further, the Navy has also recognized the importance of capturing energy consumed at the waterfront in support of the Navy fleet and is now integrating these areas into AMI deployment.

The Navy reported over 10,231 advanced meters connected to an AMS for electricity, around 722 for natural gas, nearly 2,297 for water, and 272 for steam in FY 2015 (Table 6-7).

Table 6-6: FY 2015 Navy Metering Profile

Commodity	Total Consumption (BBTU)	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Installations with Installation-level Advanced Meters	% Installations with Installation-level Advanced Meters
Electricity	24,057	12,124	50%	43	52%
Natural Gas	14,814	1,634	11%	15	18%

Commodity	Total Consumption (BBTU or Thou Gal)	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Water Intensive Facilities (Water) or Facilities Connected to District Steam System (Steam)	% of Water Intensive or Steam Connected Facilities Metered
Water	23,033,416	3,931,820	17%	39	47%
Steam				15	18%

Table 6-7: FY 2015 Navy AMS Progress

Commodity	Number of Metered Buildings Connected to AMS		Number of Metered Buildings not connected to AMS
	Advanced Meters	Other	
Electricity	10,231	399	9,732
Natural Gas	722	604	2,563
Water	2,297	1,886	7,382
Steam	272	76	799

Per NDAA FY 2012 , the DON has an additional requirement to meter Navy piers so that the energy consumption of naval vessels while in port can accurately be measured. As of FY 2015, the Navy had 24 installations with an estimated 525 piers/berths with meters installed for electricity consumption, approximately 75 percent of which were using advanced meters. Pier berths have also been metered with a mix of standard and advanced meters for other utilities: approximately 60 piers/berths for steam, and 160 for water. With over 6,700 billion BTUs of shore energy consumed at the waterfront in FY 2015, metered piers will continue to support region and installation efforts to engage the operational fleet in reducing energy consumption ashore.

In FY 2015, the Marine Corps AMS captured 24 percent of total electricity consumption, 36 percent of natural gas consumption, and 12 percent of water consumption (Table 6-8). The Marine Corps reported over 2,700 advanced meters connected to an AMS for electricity, 615 for natural gas, and a little over 500 for water in FY 2015 (Table 6-9).

Table 6-8: FY 2015 Marine Corps Metering Profile

Commodity	Total Consumption (BBTU)	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Installations with Installation-level Advanced Meters	% Installations with Installation-level Advanced Meters
Electricity	5,895	1,417	24%	9	43%
Natural Gas	3,080	1,108	36%	2	10%

Commodity	Total Consumption (BBTU or Thou Gal)	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Water Intensive Facilities (Water) or Facilities Connected to District Steam System (Steam)	% of Water Intensive or Steam Connected Facilities Metered
Water	6,790,912	798,983	12%	5	20%
Steam				2	10%

Table 6-9: FY 2015 Marine Corps AMS Progress

Commodity	Number of Metered Buildings Connected to AMS		Number of Metered Buildings not connected to AMS
	Advanced Meters	Other	
Electricity	2,725	195	1,503
Natural Gas	615	140	756
Water	502	235	996
Steam	-	-	70

Air Force

In FY 2015, AFCEC continued to execute its meter data management plan (MDMP) including the deployment of the Advance Meter Reading System (AMRS) with the intention to deploy to 16 additional bases over the next two years. The metering program will continue to focus on the goals set forth in the OSD policy by planning and executing the following:

- Installation of advanced meters adequate to capture 60 percent of Air Force consumed energy.
- Deployment of AMRS to approximately 40 of the highest energy consuming installations.
- Training for AMRS users to enhance energy analysis and reduce consumption.
- Use of AMRS data to inform leadership decisions.
- Cost-benefit analysis after 60 percent of energy is captured to determine if further investments in ARMS should continue.

The Air Force has installed installation advanced meters for both electricity and natural gas on two of its installations (Table 6-10). The Air Force reported there are 37 buildings with meters connected to an AMS for electricity, with 27 of those being advanced meters (Table 6-11).

Table 6-10: FY 2015 Air Force Metering Profile

Commodity	Total Consumption (BBTU)	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Installations with Installation-level Advanced Meters	% Installations with Installation-level Advanced Meters
Electricity	30,485	72	0%	2	1%
Natural Gas	21,114	4	0%	2	1%

Commodity	Total Consumption (BBTU or Thou Gal	Energy Consumption Captured by an AMS	% Energy Captured by an AMS	Number of Water Intensive Facilities (Water) or Facilities Connected to District Steam System (Steam)	% of Water Intensive or Steam Connected Facilities Metered
Water	22,805,102	0	0%	1	0.2%
Steam				0	0%

Table 6-11: FY 2015 Air Force AMS Progress

Commodity	Number of Metered Buildings Connected to AMS		Number of Metered Buildings not connected to AMS
	Advanced Meters	Other	
Electricity	27	10	14,050
Natural Gas	-	19	7,337
Water	20	-	4,427
Steam	-	-	351

Defense Agencies

The Defense Agencies continue to enhance metering data management. The following are examples of initiatives to promote metering:

- DIA uses a building automation system (BAS) that captures energy trends on all its electrical utilities and currently has advanced meters in all buildings of adequate size for BAS implementation. In FY 2016, DIA will be identifying opportunities to add advanced natural gas and water metering to the BAS systems, to include advanced natural gas metering on new boilers being installed in DIA HQ.
- NRO provided their MDMP to OASD(EI&E) in FY 2015 and has initiated a number of projects to implement this plan including the monitoring of utility circuits at the distribution level; installing pulse meters on all gas entrances; performing a study to incorporate sewer, water, and gas to meters into an advanced metering system; and networking meter data to the Facility Management system and the enterprise facility management software in order to provide real-

time visibility of energy use. This data provides the opportunity to evaluate consumption patterns, benchmark consumption, and uncover potential anomalies.

- WHS has installed over 100 meters and sub-meters at buildings on the Pentagon Reservation. The Pentagon metering plan will install advanced meters to capture electricity, steam, chilled water, natural gas, hot water, and potable water for individual buildings on the Reservation, as well as additional sub-meters to support operations and maintenance of mission-critical users. WHS is also developing an energy monitoring dashboard incorporating existing and new meters to support energy management activities at the Pentagon. As of FY 2015, approximately 85 percent of Phase 1 meters were installed.
- NSA has undertaken an aggressive program to monitor electrical usage through its SCADA system. The SCADA system allows the monitoring of mission-critical systems and also building energy consumption. The SCADA system acts as the campus meter and allows for building-level analysis of energy consumption.

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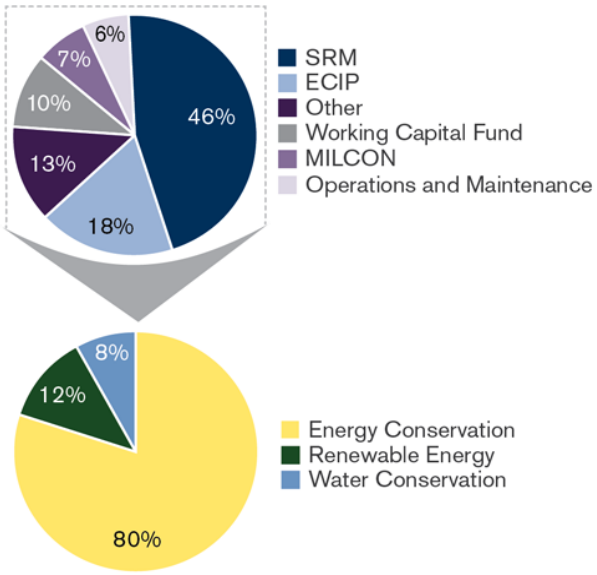
7. Funding Energy Projects

The Department continues to invest in energy and water conservation, renewable and distributed energy, as well as energy resilience projects using both appropriations and third-party financing. Appendix G contains the FY 2015 list of appropriated and third-party funded projects.

Appropriation Funded Energy Projects

Appropriations are direct funding authorities through MILCON; Sustainment, Restoration, and Modernization (SRM); Operation and Maintenance (O&M); and Defense Working Capital Fund (DWCF) accounts. For example, ECIP is a $150 million annual MILCON appropriation program centrally managed by the OSD to fund projects that save energy or reduce defense energy costs. It evaluates potential projects using a variety of criteria, including cost effectiveness, savings to investment ratio, and simple financial payback.

Figure 7-1: FY 2015 DoD Projects Funded by Appropriations, by Investment Amount



Congressional appropriations amounting to slightly less than $555 million funded 815 projects in FY 2015. The majority of these projects, over 80 percent, were energy conservation projects with the remainder being renewable energy and water conservation projects (12.0 and 8.0 percent, respectively) (Figure 7-1). Table 7-1 summarizes projects funded with FY 2015 appropriations by type, includes aggregate estimates of total project costs as well as the total number of funded projects.

Table 7-1: FY 2015 DoD Appropriations[21]

Project Type	Estimated Financial Obligation ($000s)	Number of Projects
Energy Conservation	$445,726	737
Renewable Energy	$65,142	35
Water Conservation	$44,099	43
Total	$554,967	815

[21] Totals include Defense Agencies.

Table 7-1 (cont'd): FY 2015 DoD Appropriations

Funding Mechanism	Definition
1. Military Construction (MILCON) including the Energy Conservation Investment Program (ECIP)	MILCON, ECIP, O&M, and DWCF are appropriations that finance energy projects at DoD facilities. These are direct funding authorities through appropriated accounts. ECIP is a subset of the defense-wide MILCON program, specifically designated for projects that save energy or reduce defense energy costs. ECIP supports construction of new high efficiency energy systems and the improvement and modernization of existing systems.
2. Operation and Maintenance (O&M)	
3. Defense Working Capital Fund (DWCF)	

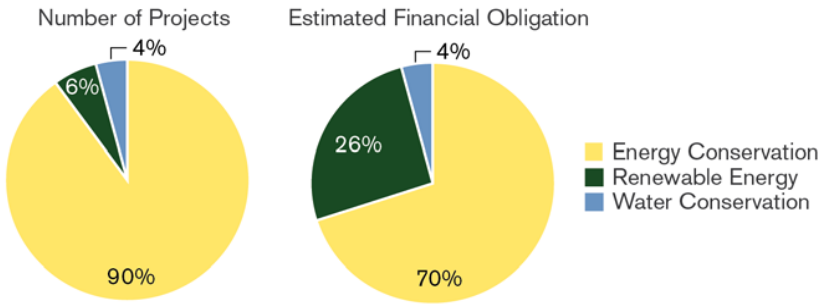
Army

In FY 2015, the Army spent nearly $221 million in appropriated funds for 429 energy conservation, renewable energy, and water conservation projects. These projects included lighting retrofits, HVAC improvements, and the installation of renewable energy projects such as small-scale solar PV and solar thermal systems. Table 7-2 summarizes the breakdown of appropriated projects and associated funding for the Army. Energy conservation initiatives constitute the overwhelming majority of projects—over 90 percent of the total count and 70 percent of funding—as shown in Figure 7-2.

Table 7-2: FY 2015 Army Appropriations

Project Type	Estimated Financial Obligation ($000s)	Number of Projects
Energy Conservation	$155,083	385
Renewable Energy	$56,291	26
Water Conservation	$9,483	18
Total	$220,857	429

Figure 7-2: FY 2015 Army Projects Funded by Appropriations



DON

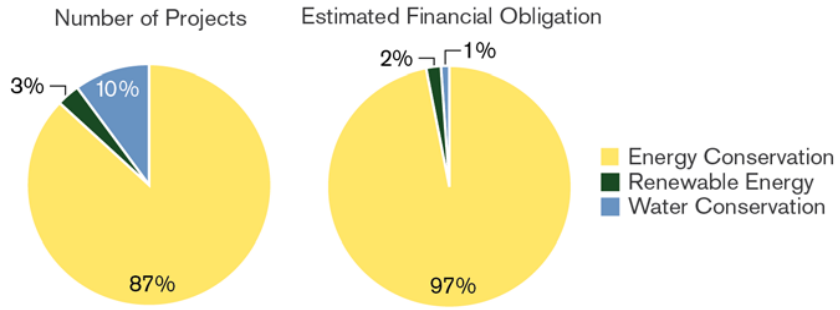
In FY 2015, DON awarded just over $224 million in appropriated funds for 199 energy conservation, renewable energy, and water conservation projects. These projects included building retro-commissioning, the installation of building energy management control systems, and renewable energy applications such as solar thermal and GSHPs. Table 7-3 summarizes the breakdown of appropriated projects and associated funding for the Navy and the Marine Corps.

Table 7-3: FY 2015 DoN Appropriations

Project Type	Estimated Financial Obligation ($000)	Number of projects
Navy = 158 Projects		
Energy Conservation	$173,374	132
Renewable Energy	$3,541	6
Water Conservation	$25,018	20
Marine Corps = 41 Projects		
Energy Conservation	$22,110	41
Renewable Energy	$0	0
Water Conservation	$0	0
Grand Total	$224,043	199

Of the total number of projects in FY 2015, 87 percent were energy conservation projects, as illustrated in Figure 7-3.

Figure 7-3: FY 2015 DON Projects Funded by Appropriations



Air Force

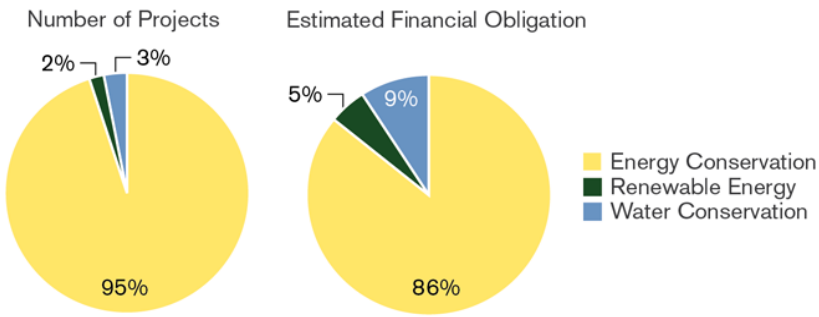
In FY 2015, the Air Force spent $106 million in appropriated funds for 172 energy conservation, renewable energy, and water conservation projects. These projects included lighting and lighting controls upgrades, chiller and boiler improvements, building retro-commissioning, and water conservation investments. Table 7-4 summarizes the breakdown of appropriated projects and associated funding for the Air Force in FY 2015.

Table 7-4: FY 2015 Air Force Appropriations

Project Type	Estimated Financial Obligation ($000s)	Number of Projects
Energy Conservation	$91,454	164
Renewable Energy	$5,309	3
Water Conservation	$9,598	5
Total	$106,361	172

Of the projects awarded in FY 2015, 95 percent were energy conservation projects. Water conservation and renewable energy projects represent 3.0 percent and 2.0 percent, respectively, of the Air Force's total appropriated projects. (Figure 7-4)

Figure 7-4: FY 2015 Air Force Projects Funded by Appropriations



Energy Projects Financed Through Third-Party Mechanisms

The Department is increasingly relying on third-party financing mechanisms such as UESCs and ESPCs. These financing vehicles allow DoD to implement energy efficiency, renewable, and distributed energy projects, as well as energy resilience projects without up-front appropriated funds. The Federal Government repays the private capital over time using cost savings generated by the implemented projects. In FY 2015, DoD awarded just over $292 million in non-Governmental, third-party financed ESPCs and UESCs. Table 7-5 summarizes the total contract awarded value of ESPCs and UESCs financed in FY 2015.

Table 7-5: FY 2015 DoD Third-Party Funding

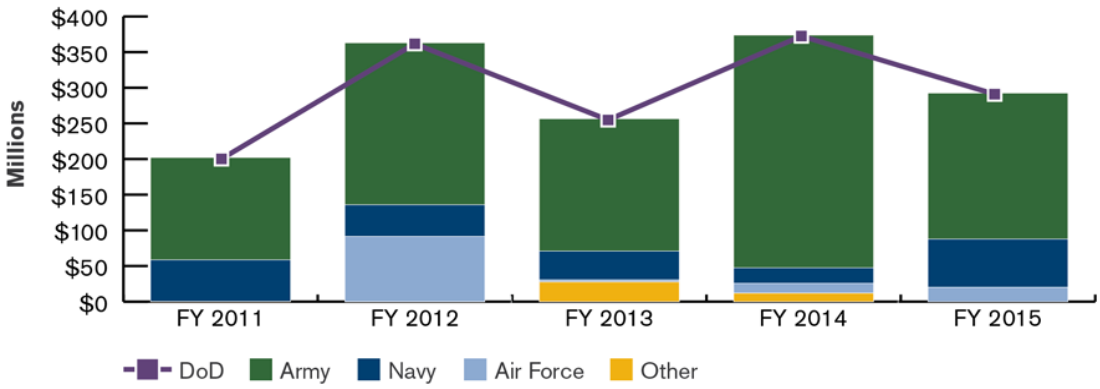
Funding Mechanism	Total Investment Value ($000)
ESPC	$190,337
UESC	$102,111
Total	$292,447

Funding Mechanism	Definition
Energy Savings Performance Contracts (ESPC)	An ESPC is a partnership between a Federal agency and an energy service company (ESCO). The ESCO conducts a comprehensive energy audit for the Federal facility and identifies improvements to save energy. In consultation with the Federal agency, the ESCO designs and constructs a project that meets the agency's needs and arranges the necessary funding. The ESCO guarantees that the improvements will generate energy cost savings sufficient to pay for the project over the term of the contract. After the contract ends, all additional cost savings accrue to the agency. Contract terms up to 25 years are allowed.
Utility Energy Service Contracts (UESC)	In a UESC, a utility arranges funding to cover the capital costs of the project, which are repaid over the contract term from cost savings generated by the energy efficiency measures. With this arrangement, agencies can implement energy improvements with no initial capital investment. The net cost to the Federal agency is minimal, and the agency saves time and resources by using the one-stop shopping provided by the utility.

In December 2011, the President issued a challenge—the President's Performance Contracting Challenge (PPCC)—to the Federal Government to award $2 billion in third-party financed energy efficiency projects over those next two years. DoD's share of the Phase I goal was $1.2 billion. While DoD did not fully execute the goal amount before the deadline of December 31, 2013, the challenge increased DoD's use of third-party financing at a time when severe budget reductions limited appropriated funds available for energy efficiency projects. In December 2013, building on the Phase I of the PPCC, the President extended the PPCC through FY 2016. As of FY 2015, DoD's cumulative Phase I

and Phase 2 PPCC goal target is now slightly below $2.2 billion ($2.183 billion). Figure 7-5 shows the breakdown of third-party financing used by DoD from the start of the PPCC in FY 2011 to FY 2015.

Figure 7-5: FY 2011 – FY 2015 DoD Third-Party Financing



Army

In FY 2015, the Army awarded 31 ESPC task orders with an investment value of $155.8 million, and an additional 8 UESC projects worth $49 million, for a total of $204.8 million (Table 7-6). These projects will save 801 BBtus and more than $14.2 million annually, which will be used to repay the third-party investments over the lifetime of the contracts. The combined total of all Army ESPC and UESC investments over the life of the program exceeds $2.23 billion. More than 15 additional projects are currently under development. The Army anticipates meeting PPCC goals and awarding an average of $150 million worth of ESPC/UESC projects each year throughout the foreseeable future.

Table 7-6: FY 2015 Army Non-Governmental Third-Party Funding

ESPC	Count, Thou. $s
Number of ESPC Task/Delivery Orders awarded in fiscal year	31
Investment value of ESPC Task/Delivery Orders awarded in fiscal year.	$155,761
UESC	**Count, Thou. $s**
Number of UESC Task/Delivery Orders awarded in fiscal year	8
Investment value of UESC Task/Delivery Orders awarded in fiscal year.	$49,007

The Army has exceeded its PPCC alternative financing goal, with total ESPC and UESC awards of $926.4 million associated with 109 task orders through the end of FY 2015. The Army leads PPCC effort with 40 percent of all Federal implementation to date (out of 29 percent of Federal Real Property portfolio).

DON

In FY 2015, the Navy awarded approximately $39 million in estimated investment ESPC and UESC project value and the Marine Corps awarded approximately $28 million in investment value for a UESC project. Project locations for awarded ESPCs and UESCs this year included Joint Base Pearl Harbor Hickam, Joint Expeditionary Base Little Creek-Fort Story, Fleet Readiness Center Southwest, Hadnot Point, Camp Johnson, Camp Geiger, Marine Corps Air Station New River, and Courthouse Bay. Once implemented, these contracts are projected to yield combined energy savings of nearly 100,000 million Btus annually. (Table 7-7).

Table 7-7: FY 2015 DON Non-Governmental Third-Party Funding

ESPC	Count, Thou. $s
Number of ESPC Task/Delivery Orders awarded in fiscal year	2
Investment value of ESPC Task/Delivery Orders awarded in fiscal year.	$33,664
UESC	**Count, Thou. $s**
Number of UESC Task/Delivery Orders awarded in fiscal year	2
Investment value of UESC Task/Delivery Orders awarded in fiscal year.	$33,923

Air Force

In FY 2015, the Air Force awarded both an ESPC and UESC task order totaling just over $20 million. These projects were awarded at Laughlin AFB and Tinker AFB and their combined savings are estimated at over 185,000 million Btus annually (Table 7-8).

Table 7-8: FY 2015 Air Force Non-Governmental Third-Party Funding

ESPC	Count, Thou. $s
Number of ESPC Task/Delivery Orders awarded in fiscal year	1
Investment value of ESPC Task/Delivery Orders awarded in fiscal year.	$911
UESC	**Count, Thou. $s**
Number of UESC Task/Delivery Orders awarded in fiscal year	1
Investment value of UESC Task/Delivery Orders awarded in fiscal year.	$19,181

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8. Federal Building Energy Efficiency Standards

In addition to retrofitting existing buildings, the Department is taking advantage of new construction to incorporate more energy efficient designs, material, and equipment into its building inventory with the goal of producing new buildings that are less expensive to own and operate, improve employee health and productivity, and leave a smaller environmental footprint. In FY 2013, the Department published UFC 1-200-02, *High Performance and Sustainable Building (HPSB) Requirements*, which provides minimum standards and coordinating guidance for planning, designing, constructing, renovating, and maintaining high performance and sustainable facilities that will enhance DoD mission capability by reducing total ownership costs. The UFC, combined with the Department's new sustainable buildings policy signed in November 2013, represent comprehensive guidance to ensure DoD construction practices result in buildings that meet all Federal mandates related to energy and the environment, including the Federal Guiding Principles for HPSBs.

The Guiding Principles of Federal Leadership in HPSB are aimed at helping Federal agencies and organizations reduce the total ownership cost of facilities; improve energy efficiency and water conservation; provide safe, healthy, and productive building environments; and promote sustainable environmental stewardship. The five strategic principles in HPSB guide agencies to (1) use integrated design principles, (2) optimize energy performance, (3) protect and conserve water, (4) enhance indoor environmental quality, and (5) reduce the environmental impact of materials.

DoD's Progress in Meeting Sustainable Building Standards

With over 47,000 buildings covered by sustainable building standards—many of which were constructed prior to establishment of the HPSB guidance—DoD faces several challenges in meeting the goals. In FY 2015, 511 DoD buildings met the sustainable buildings requirements.

DoD's Progress Toward Meeting American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) 90.1 Standards

The Department continues to incorporate sustainable and high-performance building design elements to enhance energy and water system efficiencies. In FY 2016, 100 percent of new building designs started after FY 2007 are expected to exceed the ASHRAE 90.1-2007 energy efficiency standard by 30 percent.

Army

In FY 2014, the Army issued an updated Sustainable Design and Development (SDD) Policy in order to establish a comprehensive process to include energy and sustainability considerations as a fundamental part of the facility design process. This process continues to allow the Army to meet all Federal building performance and sustainability requirements when constructing new buildings or undertaking major renovations.

Army's Progress toward Meeting ASHRAE 90.1 Standards

All new Army projects designed after August 10, 2012, meet the EPAct 2005 requirement to cost-effectively achieve an energy savings of at least 30 percent greater than ASHRAE 90.1-2007 standards. For example, the ARNG began construction on six new building designs in FY 2015, exceeding the ASHRAE standard by 30 percent. These higher energy standards are helping the Army advance toward the FY 2015 goal of reducing energy consumption in new building and major renovation projects by 65 percent compared to similar buildings constructed in FY 2003, in accordance with EISA 2007, Section 433. FY 2016 new construction and major renovations will exceed all EPAct 2005 and EISA provisions related to building energy efficiency.

DON

In FY 2015, 36 percent of Navy's reported new buildings designed since 2007 were estimated to be at least 30 percent below the ASHRAE 90.1–2004 standards; an additional 16 percent of reported new buildings were estimated to be at least 30 percent below the ASHRAE 90.1–2007 standards; and another 6.5 percent were estimated to be at least 30 percent below the ASHRAE 90.1–2010 standards. Projects that were not 30 percent below the standard were designed to achieve life-cycle cost-effective energy efficiency.

- NB Coronado: In May 2015, a ribbon cutting ceremony was held for the newly constructed fitness center at Naval Air Station North Island. The new facility incorporates energy savings initiatives such as a design that maximizes daylight throughout the building, high insulated windows and wall systems, solar pool and domestic water heaters, and a 337 KW PV panel array.
- NAS Jacksonville: A reconstruction project was underway in FY 2015 to re-engineer and modernize an airfield while integrating more sustainable characteristics. Design included best management practices regarding erosion control and storm water runoff to help preserve the surrounding ecosystem. Waste management construction strategies reduced demolition waste by recycling on-site hardscape materials that were crushed and will be re-used for the new runway. In addition, high efficiency LED lighting system will replace airfield lighting and yield estimated energy savings of $100,000 annually.

DON's Progress toward Meeting ASHRAE 90.1 Standards

In FY 2015, 36 percent of Navy's reported new buildings designed since 2007 were estimated to be at least 30 percent below the ASHRAE 90.1–2004 standards; an additional 16 percent of reported new buildings were estimated to be at least 30 percent below the ASHRAE 90.1–2007 standards; and another 6.5 percent were estimated to be at least 30 percent below the ASHRAE 90.1–2010 standards. Where projects were not 30 percent below the standard, the projects were designed to achieve life-cycle cost-effective energy efficiency.

Air Force

The Air Force works to incorporate sustainability into its new construction program in a mission enduring, resource efficient, and fiscally responsible manner. The Air Force continues to update policies to address Federal requirements, and works to meet or exceed the requirements where possible. For example, over 98 percent of all buildings completed in FY 2015 met the Federal HPSB standards.

Air Force's Progress toward Meeting ASHRAE 90.1 Standards

The Air Force issued its Air Force SDD Policy Memorandum in July 31, 2007, and the SDD Implementing Guidance on June 2, 2011. The SDD Implementing Guidance memorandum requires all new construction and major renovations to fully incorporate the HPSB Guiding Principles, which include the requirement to be at least 30 percent more energy efficient than ASHRAE 90.1-2007. Even with the diversity of building types in the Air Force's new construction program, about 80 percent of the program achieves or exceeds the 30 percent energy efficient requirement.

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Acronym	Definition
AEMR	Annual Energy Management Report
AFB	Air Force Base
AFCEC	Air Force Civil Engineer Center
AFIMSC	Air Force Installation and Mission Support Center
AFLCMC	Air Force Life-Cycle Management Center
AFPD	Air Force Policy Directive
AFV	Alternative Fuel Vehicle
AMC	Army Materiel Command
AMI	Advanced Meter Infrastructure
AMRS	Advanced Meter Reading Systems
AMS	Advanced Metering System
ANGB	Air National Guard Base
ARNG	Army National Guard
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASN (EI&E)	Assistant Secretary of the Navy for Energy, Installations and Environment
BAS	Building Automation System
BBtu	Billion British Thermal Unit
BEM	Building Energy Monitors
Btu	British Thermal Unit
CDD	Capabilities Development Document
CEQ	Council on Environmental Quality
CES	Civil Engineer Squadron
CIRCUITS	Comprehensive Utilities Information Tracking System
CNG	Compressed Natural Gas
CNIC	Commander, Navy Installations Command
CNO	Office of the Chief of Naval Operations
DASA (E&S)	Deputy Assistant Secretary of the Army for Energy and Sustainability
DASN (Energy)	Deputy Assistant Secretary of the Navy for Energy
DC I&L	Deputy Commandant for Installations and Logistics
DCMA	Defense Contract Management Agency
DeCA	Defense Commissary Agency
Det	Detachment
DFAS	Defense Finance and Accounting Service
DHS	Department of Homeland Security
DIA	Defense Intelligence Agency
DLA	Defense Logistics Agency
DoD	Department of Defense

Acronym	Definition
DoDI	Department of Defense Instruction
DOE	Department of Energy
DON	Department of the Navy
DSC	Distributed Control Systems
DUSD (I&E)	Deputy Under Secretary of Defense (Installations and Environment)
DWCF	Defense Working Capital Fund
E85	85 percent ethanol fuel
ECIP	Energy Conservation Investment Program
EIA	Energy Information Administration
EISA	Energy Independence and Security Act
EO	Executive Order
EPAct	Energy Policy Act
ESAP	Energy Security Audit Program
ES^2	Energy Security and Sustainability
ESCO	Energy Service Company
ESA	Energy Security Assessment
ESG	Energy Steering Groups
ESIPT	Energy Security Integrated Process Team
ESPC	Energy Savings Performance Contract
ESTCP	Environmental Security Technology Certification Program
EUI	Energy Use Intensity
EUL	Enhanced Use Lease
EVSE	Electric Vehicle Charging Equipment
EXWC	Engineering and Expeditionary Warfare Center
FY	Fiscal Year
GGE	Gallons of Gasoline Equivalent
GHG	Greenhouse Gas
GSA	Electric Vehicle Charging Equipment
GSF	Gross Square Foot
GSHP	Ground Source Heat Pump
GW	Gigawatt, 1 billion Watts
HAF	Headquarters U.S. Air Force
HPSB	High Performance and Sustainable Buildings
HQ	Headquarters
HVAC	Heating, Ventilation, and Air Conditioning
IC	Intelligence Community
ICS	Industrial Control System
ILA	Industrial, Landscaping, and Agriculture
IMCOM	Installation Management Command
JBMDL	Joint Base MacGuire-Dix-Lakehurst

Acronym	Definition
JCTD	Joint Capability Technology Demonstration
KW	Kilowatt, 1 thousand Watts
KWh	Kilowatt-Hour, 1 thousand Watt-hours
LAAFB	Los Angeles AFB
LED	Light Emitting Diode
LEP	Light Emitting Plasma
LPG	Liquefied Petroleum Gas
MAD	Mission Assurance Division
MAJCOM	Major Command
MCAGCC	Marine Corps Air Ground Combat Center
MCICOM	Marine Corps Installations Command
MCICOM GF	Marine Corps Installations Command, Director Facilities
MCICOM GF-1	Marine Corps Installations Command, Energy and Facilities Operations Section
MDA	Missile Defense Agency
MDMP	Meter Data Management Plan
MDMS	Meter Data Management System
MILCON	Military Construction
MIT-LL	Massachusetts Institute of Technology – Lincoln Laboratory
MSW	Municipal Solid Waste
MUSE	Mobile Utilities Support Equipment
MW	Megawatt, 1 million Watts
MWh	Megawatt-Hour, 1 million Watt-hours
NAS	Naval Air Station
NAVFAC	Naval Facilities Engineering Command
NAWS	Naval Air Weapons Station
NB	Naval Base
NCBC	Naval Construction Battalion Command
NCE	NGA Campus East
NDAA	National Defense Authorization Act
NECPA	National Energy Conservation Policy Act
NGA	National Geospatial-Intelligence Agency
NIST	National Institute of Standards and Technology
NNSY	Norfolk Navy Shipyard
NOITA	Notice of Intent to Award
NRO	National Reconnaissance Office
NS	Naval Station
NSA	National Security Agency
NSA	Naval Supply Activity
NSWC	Naval Surface Warfare Center
NTV	Non-Tactical Vehicle

Acronym	Definition
O&M	Operations and Maintenance
OACSIM	Office of the Assistant Chief of Staff for Installation Management
OASA(ALT)	Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology
OASA(IE&E)	Office of the Assistant Secretary of the Army for Installations, Energy and Environment
OASD(EI&E)	Office of the Assistant Secretary of Defense for Energy, Installations, and Environment
OD	Operational Demonstration
ODASD(IE)	Office of the Deputy Assistant Secretary of Defense for Installation Energy
OMB	Office of Management and Budget
OPNAV-N46	CNO Shore Installation Management Division
PEV	Plug-in Electric Vehicle
PLC	Programmable Logic Controllers
POCC	Point of Common Coupling
PPA	Power Purchase Agreement
PPCC	President's Performance Contracting Challenge
PV	Photovoltaic
REC	Renewable Energy Credit
REPD	Renewable Energy Project Development
REPO	Renewable Energy Program Office
RFP	Request For Proposal
SAF/IEN	Deputy Assistant Secretary of the Air Force for Energy
SAF/US	Under Secretary of the Air Force
SCADA	Supervisory Control and Data Acquisition
SDD	Sustainable Design and Development
SESC	Senior Energy and Sustainability Council
SPIDERS	Smart Power Infrastructure Demonstration for Energy Reliability and Security
SRM	Sustainment, Restoration, and Modernization
UESC	Utility Energy Services Contract
UFC	Unified Facilities Criteria
UP	Utilities Privatization
U.S.	United States
USACE	US Army Corps of Engineers
USAR	US Army Reserve
U.S.C	United States Code
USC	Utility Service Contract
V2G	Vehicle to Grid
VAM	Vehicle Allocation Methodology
VSCOS	Vehicle Support Chain Operation Squadron
WHS	Washington Headquarters Service

	Subsection / Paragraph	Description	FY2015 AEMR Chapter / Appendix	Page Number
10 USC § 2925	**(a)**	**Annual Report Related to Installations Energy Management.** — Not later than 120 days after the end of each fiscal year, the Secretary of Defense shall submit to the congressional defense committees an installation energy report detailing the fulfillment during that fiscal year of the energy performance goals for the Department of Defense under section 2911 of this title. Each report shall contain the following:		
	(a)(1)	A description of the progress made to achieve the goals of the Energy Policy Act of 2005 (Public Law 109–58), Section 2911 (e) of this title, Section 553 of the National Energy Conservation Policy Act (42 U.S.C. 8259b), the Energy Independence and Security Act of 2007 (Public Law 110–140), and the energy performance goals for the Department of Defense during the preceding fiscal year.	**3, 4, 5**	16,25,32,41
	(a)(2)	A table detailing funding, by account, for all energy projects funded through appropriations.	**Appendix F**	F-1
	(a)(3)	A table listing all energy projects financed through third party financing mechanisms (including energy savings performance contracts, outgrants, utility energy service contracts, utility privatization agreements, and other contractual mechanisms), the duration of each such mechanism, an estimate of the financial obligation incurred through the duration of each such mechanism, whether the project incorporates energy security into its design, and the estimated payback period for each such mechanism.	**Appendix F**	F-28
	(a)(4)	In addition to the information contained in the table listing energy projects financed through third party financing mechanisms, as required by paragraph (3), the table also shall list any renewable energy certificates associated with each project, including information regarding whether the renewable energy certificates were bundled or unbundled, the purchasing authority for the renewable energy certificates, and the price of the associated renewable energy certificates.	**4**	35

	Subsection / Paragraph	Description	FY2015 AEMR Chapter / Appendix	Page Number
	(a)(5)	A description of the actions taken to implement the energy performance master plan in effect under Section 2911 of this title and carry out this chapter during the preceding fiscal year	**3, 4**	15,32
	(a)(6)	A description of the energy savings realized from such actions.	**3, 4**	15,32
	(a)(7)	An estimate of the types and quantities of energy consumed by the Department of Defense and members of the armed forces and civilian personnel residing or working on military installations during the preceding fiscal year, including a breakdown of energy consumption by user groups and types of energy, energy costs, and the quantities of renewable energy produced or procured by the Department.	**3,4**	15,32
	(a)(8)	A description of the types and amount of financial incentives received under Section 2913 of this title during the preceding fiscal year and the appropriation account or accounts to which the incentives were credited.	**3, 7**	17,60
	(a)(9)	A description and estimate of the progress made by the Military Departments to meet the certification requirements for sustainable green-building standards in construction and major renovations as required by section 433 of the Energy Independence and Security Act of 2007 (Public Law 110–140; 121 Stat. 1612).	**8**	67
	(a)(10)	A description of steps taken to determine best practices for measuring energy consumption in Department of Defense facilities and installations, in order to use the data for better energy management.	**6**	53
	(a)(11)	Details of utility outages at military installations including the total number and locations of outages, the financial impact of the outage, and measures taken to mitigate outages in the future at the affected location and across the Department of Defense.	**5**	41

	Subsection / Paragraph	Description	FY2015 AEMR Chapter / Appendix	Page Number
	(a)(12)	A description of any other issues and strategies the Secretary determines relevant to a comprehensive and renewable energy policy.	**4**	32
10 USC § 2911	(a)(1)	Energy Performance Goals. The DoD shall submit to the congressional defense committees the energy performance goals for the Department of Defense regarding transportation systems, support systems, utilities, and infrastructure and facilities.	**Appendix C**	C-1
	(b)(1)	Energy Performance Master Plan. The DoD shall develop a comprehensive master plan for the achievement of the energy performance goals of the Department of Defense, as set forth in laws, executive orders, and Department of Defense policies.	**Appendix C**	C-1
	(e)(2)	Interim Renewable Energy Goal. Requires the DoD to establish an interim FY 2018 goal for the production or procurement of facility energy from renewable sources.	**4, Appendix C**	32, C-1
Senate Armed Services Committee National Defense Authorization Act For Fiscal Year 2016 Report to accompany S.1376 (Report 114-49)	p. 212-213	Analysis of domestic Department of Defense installations' gas and oil reserves. The Assistant Secretary for Energy, Installations and Environment, is directed to provide an analysis of major Department of Defense installations with likely gas and oil reserves, the expected quality of the reserves, the estimated costs and savings of producing gas and oil, the statutory and regulatory challenges in implementing related energy development projects, mission and environmental impacts, and recommendations of which installations, if any, may benefit from such development.	**5**	44

	Subsection / Paragraph	Description	FY2015 AEMR Chapter / Appendix	Page Number
DoD Appropriations Bill, 2016, Committee on Appropriations Report 114-139	p. 88	Energy Efficiency Report for DoD Facilities. Submit a report on the energy use and energy efficiency projects at the Pentagon and the ten largest DoD facilities; include, but is not limited to, an analysis of energy use at the Pentagon Reservation and the ten largest DoD facilities; an accounting, including dates, of when energy audits and energy efficiency projects have been conducted at such facilities; and any potential savings associated with efficient lighting systems. SECDEF report.	**3**	20

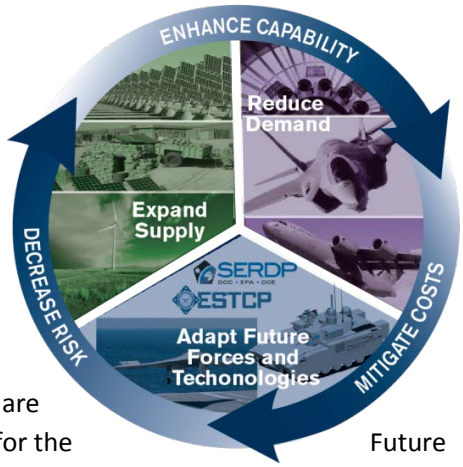
Introduction

Facility energy is the energy necessary to support the functions of over 500 fixed installations on nearly 29 million acres of land within the United States and internationally. This energy is distinct from operational energy which consists largely of mobility fuel that is used by operational aircraft, ships, and tanks, as well as generators at forward operating bases.

The Energy Performance Master Plan (hereafter referred to as Master Plan) aligns investments to energy objectives, enables consistent Department-wide decision-making, and establishes metrics to evaluate DoD's progress against the energy performance goals. The Master Plan was established and reported in the FY 2011 AEMR. The goals outlined in the Master Plan align with the Department's facility energy strategy designed to reduce energy costs and improve the energy resilience of fixed installations. The Department's facility energy strategy focuses on promoting efficiency, reducing costs, and supporting the mission. The key elements of the facility energy strategy are (Figure 1.0):

- Expand Supply
- Reduce Demand
- Adapt Future Forces and Technology

Figure 1.0: Defense Energy Approach



In FY 2011, the then Office of the Deputy Under Secretary of Defense for Installations and Environment (ODUSD(I&E))–now the Office of the Deputy Assistant Secretary of Defense for Installations and Environment (ODASD(IE))–developed its energy performance goals and its first Master Plan with input from DoD Components. The energy performance goals will be reviewed and reported annually, while the Master Plan will be updated periodically in the AEMR. However, DoD Components are required to submit their facility energy investment projections for the Future Years Defense Program (FYDP) as part of their Master Plan submittal. The DoD Components' submissions to the President Budget, investment profile, energy benefit analyses, and narratives will be the basis for any periodic updates of the Master Plan within the AEMR.

Energy Performance Goals

The ODASD(IE) currently oversees the Department's facility energy program. ODASD(IE) collaborated with the Military Departments and Defense Agencies to develop its energy performance goals. These energy performance goals of DoD have not changed from its previous submittal, and Table 1.0 summarizes the three DoD facility energy performance goals. The table defines these goals and describes the associated measures, methods of measurement, and metrics. Table 1.1 summarizes DoD's targets for each goal, including the interim FY 2018 renewable goal (also part of last year's submittal).

Table 1.0: DoD Energy Performance Goals

Goal	Description	Uniform Measure	Method of Measurement	Metric
Improve Energy Efficiency	Decrease installation energy consumption and improve energy intensity.	Energy consumption[1] per gross square foot (energy intensity).	Energy intensity reduction.	British thermal units per thousand gross square feet (Btu/ Thousand GSF)
Increase Renewable Energy	Increase the production and procurement of on-base renewable energy.	Electric and non-electric renewable energy production and procurement.	Electric and non-electric renewable energy produced or procured compared to electricity consumption.	Billion Btu (BBtu)
Decrease Petroleum Consumption	Decrease petroleum consumption in fleet vehicles.	Fleet vehicle petroleum consumption.[2]	Fleet vehicle petroleum consumption reduction.	Gallons of gasoline Equivalent (GGE)
[1]Energy consumption includes electricity, natural gas, fuel oil, propane, purchased steam and hot water, and coal. [2]Petroleum includes gasoline, diesel, and the diesel portion of biodiesel (B20).				

Table 1.1: Energy Performance Goals Annual Targets

Target	FY11	FY12	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY25
Energy Efficiency	-18%	-21%	-24%	-27%	-30%	-31.5%	-33%	-34.5%	-36%	-37.5%	-
Renewable Energy	-	-	-	-	-	-	-	+15%	-	-	+25%
Petroleum Consumption	-12%	-14%	-16%	-18%	-20%	-22%	-24%	-26%	-28%	-30%	-

DoD will update this Master Plan periodically to address new information, changes in energy performance goals, and to identify the investments necessary to achieve those goals. DoD's commitment to meeting the energy performance goals also supports compliance with energy statutes, regulations, and Executive Orders (EOs). Accordingly, the energy performance goals continue to advance the DoD facility energy mission, vision, and strategy.

Appendix D - DoD Energy Performance Summary

Energy Management Requirement	FY 2003 Btu/GSF	FY 2015 Btu/GSF	Percent Change FY 2003 - FY 2015	FY 2015 Goal Target
Reduction in energy intensity in facilities subject to the NECPA/E.O. 13423 goals	117,334	93,963	**-19.9%**	30.0%

Renewable Energy Requirement	Renewable Electricity Use (MWH)	Total Electricity Use (MWH)	Percentage of Facility Electric Use	FY 2015 Goal Target
Eligible renewable electricity use as a percentage of total electricity use	1,077,394.4	30,184,635.0	**3.6%**	7.5%

Scope 1&2 Greenhouse Gas Reduction Goal	FY 2008 (MTCO2e)	FY 2015 (MTCO2e)	Percent Change FY 2008 - FY 2015
Scope 1&2 Target-Subject GHG Emissions	26,855,109	23,649,256	**-11.9%**

Scope 3 Greenhouse Gas Reduction Goal	FY 2008 (MTCO2e)	FY 2015 (MTCO2e)	Percent Change FY 2008 - FY 2015	Adj. Scope 3 Percent Change FY 2008 - FY 2015
Scope 3 Target-Subject GHG Emissions	7,634,147	7,170,605	**-6.1%**	**-13.5%**

Water Reduction Goals	Baseline	FY 2015	Baseline to FY 2015	FY 2015 Goal Target
Reduction in potable water consumption intensity (2007 gal per gsf Baseline)	59.6	**46.3**	**-22.3%**	16.0%
ILA/Non-Potable Freshwater (2010 thou. gal Baseline)	11,810,300.0	**7,163,574.0**	**-39.3%**	10.0%

Metering Goals	Cumulative # of Buildings Metered for Electricity	Cumulative % of Appropriate Buildings Metered for Electricity	Cumulative # of Buildings Metered for Natural Gas	Cumulative % of Appropriate Buildings Metered for Natural Gas	Cumulative # of Buildings Metered for Steam	Cumulative % of Appropriate Buildings Metered for Steam
Standard Meters in FY 2015	16,975	39.2%	7,249	31.1%	1,092	70.8%
Advanced Meters in FY 2015	39,525	91.2%	11,013	47.2%	649	42.1%
Total Meters in FY 2015	56,500	130.4%	18,262	78.3%	1,741	112.9%

Federal Building Energy Efficiency Standards	Percent of New Building Designs	Compliance Target
Percent of new building designs started since beginning of FY 2007 that are 30 percent more energy efficient than relevant code, where life-cycle cost effective (including 8/2012 standards):	**65%**	100%

Investments in Energy and Water Management

Sources of Investment	Investment Value (Thou. $)	Anticipated Annual Savings (Million Btu)
Direct obligations for facility energy efficiency improvements	$1,131,896.9	1,677,557.9
Investment value of ESPC Task/Delivery Orders awarded in fiscal year	$165,336.6	0.0
Investment value of UESC Task/Delivery Orders awarded in fiscal year	$81,734.8	636,974.0
Total	$1,378,968.3	2,314,531.9

	Percentage
Total investment as a percentage of total facilty energy costs	37.2%
Financed (ESPC/UESC) investment as a percentage of total facilty energy costs	6.7%

i. NECPA/EISA Energy Goal Subject Buildings

Energy Type	BBtu	Cost (thous.)
Electricity	89,271	$ 2,308,946
Fuel Oil	15,390	$ 354,700
Natural Gas	64,045	$ 451,745
LPG	1,040	$ 17,203
Coal	8,439	$ 43,952
Steam	3,869	$ 122,694
Other	305	$ 4,345
Total	182,361	$ 3,303,586

Goal Subject Buildings GSF:	1,847,435
Btu/GSF:	100,050
Source Energy Savings Credit:	11,246
Btu/GSF w/ RE Source Btu Credit:	93,963

ii. NECPA/EISA Energy Goal Excluded Buildings

Energy Type	BBtu	Cost (thous.)
Electricity	10,931	$ 280,097
Fuel Oil	452	$ 11,110
Natural Gas	1,152	$ 5,560
LPG	3	$ 60
Coal	4,136	$ 16,915
Steam	564	$ 7,302
Other	0	$ -
Total	17,239	$ 321,043

Goal Subject Buildings GSF:	15,841
Btu/GSF:	1,088,279
Source Energy Savings Credit:	1,133
Btu/GSF w/ RE Source Btu Credit:	1,016,754

Appendix E - FY 2015 Energy Intensity by Installation

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
ARMY	63RD REGIONAL SUPPORT COMMAND	MOFFETT FIELD	CALIFORNIA	259	5,770	44,854
ARMY	81ST REGIONAL SUPPORT COMMAND	FORT JACKSON	SOUTH CAROLINA	292	4,636	62,949
ARMY	88TH REGIONAL SUPPORT COMMAND	FORT MCCOY	WISCONSIN	800	9,958	80,337
ARMY	99TH REGIONAL SUPPORT COMMAND	JOINT BASE MDL	NEW JERSEY	397	6,562	60,448
ARMY	9TH MISSION SUPPORT COMMAND	HONOLULU	HAWAII	7	173	39,480
ARMY	ABERDEEN PG	ABERDEEN	MARYLAND	2,562	14,136	181,219
ARMY	ADELPHI LABORATORY CTR	HYATTSVILLE	MARYLAND	201	1,136	176,655
ARMY	ALABAMA ARNG	MONTGOMERY	ALABAMA	171	3,520	48,628
ARMY	ALASKA ARNG	FORT RICHARDSON	ALASKA	42	305	137,902
ARMY	ANNISTON ARMY DEPOT	ANNISTON	ALABAMA	1,259	9,548	131,893
ARMY	ARIZONA ARNG	PHOENIX	ARIZONA	72	1,525	47,180
ARMY	ARKANSAS ARNG	CAMP ROBINSON	ARKANSAS	284	4,262	66,572
ARMY	BLUE GRASS ARMY DEPOT	RICHMOND	KENTUCKY	128	4,214	30,363
ARMY	CALIFORNIA ARNG	SACRAMENTO	CALIFORNIA	163	5,555	29,379
ARMY	CAMP ZAMA JAPAN	FPO	JAPAN	660	9,939	66,386
ARMY	CARLISLE BARRACKS	CARLISLE	PENNSYLVANIA	118	1,101	107,030
ARMY	COLORADO ARNG	ENGLEWOOD	COLORADO	80	556	143,417
ARMY	CONNECTICUT ARNG	HARTFORD	CONNECTICUT	85	1,181	71,914

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
ARMY	CORPUS CHRISTI AD	CORPUS CHRISTI	TEXAS	343	2,302	148,814
ARMY	DC ARNG (MOB)	WASHINGTON	DISTRICT OF COLUMBIA	54	589	91,256
ARMY	DELAWARE ARNG	WILMINGTON	DELAWARE	33	654	50,734
ARMY	DEVENS RFTA	DEVENS	MASSACHUSETTS	109	1,282	84,680
ARMY	DUGWAY PROVING GROUND	DUGWAY	UTAH	269	2,283	117,608
ARMY	FLORIDA ARNG	SAINT AUGUSTINE	FLORIDA	82	2,780	29,619
ARMY	FORT A P HILL	BOWLING GREEN	VIRGINIA	94	1,501	62,365
ARMY	FORT BELVOIR	FORT BELVOIR	VIRGINIA	1,256	15,355	81,814
ARMY	FORT BENNING	FORT BENNING	GEORGIA	1,999	20,927	95,518
ARMY	FORT BLISS	EL PASO	TEXAS	1,417	22,912	61,833
ARMY	FORT BRAGG	FORT BRAGG	NORTH CAROLINA	3,270	33,012	99,068
ARMY	FORT BUCHANAN	FORT BUCHANAN, CATANO	PUERTO RICO	115	1,681	68,471
ARMY	FORT CAMPBELL	FORT CAMPBELL	KENTUCKY	1,723	17,152	100,428
ARMY	FORT CARSON	COLORADO SPGS	COLORADO	1,313	14,204	92,409
ARMY	FORT DETRICK	FORT DETRICK	MARYLAND	1,129	3,482	324,248
ARMY	FORT DRUM	FORT DRUM	NEW YORK	750	11,371	65,922
ARMY	FORT GEORGE MEADE	FORT MEADE	MARYLAND	691	5,807	118,924
ARMY	FORT GORDON	AUGUSTA	GEORGIA	940	10,540	89,138
ARMY	FORT GREELY	DELTA JUNCTION	ALASKA	242	1,032	234,719
ARMY	FORT HAMILTON	NEW YORK CITY	NEW YORK	78	839	92,992
ARMY	FORT HOOD	KILLEEN	TEXAS	1,947	20,760	93,806
ARMY	FORT HUACHUCA	FORT HUACHUCA	ARIZONA	447	5,458	81,949
ARMY	FORT HUNTER LIGGETT	FORT HUNTER LIGGETT	CALIFORNIA	59	1,359	43,576
ARMY	FORT IRWIN	FORT IRWIN	CALIFORNIA	352	4,035	87,162
ARMY	FORT JACKSON	COLUMBIA	SOUTH CAROLINA	979	10,507	93,169

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
ARMY	FORT KNOX	FORT KNOX	KENTUCKY	1,030	11,100	92,748
ARMY	FORT LEAVENWORTH	FORT LEAVENWORTH	KANSAS	406	4,404	92,075
ARMY	FORT LEE	FORT LEE	VIRGINIA	889	10,519	84,497
ARMY	FORT LEONARD WOOD	FORT LEONARD WOOD	MISSOURI	1,462	12,801	114,197
ARMY	FORT MCCOY	SPARTA	WISCONSIN	401	6,698	59,803
ARMY	FORT POLK	FORT POLK	LOUISIANA	693	8,473	81,796
ARMY	FORT RILEY	FORT RILEY	KANSAS	1,153	12,214	94,397
ARMY	FORT RUCKER	FORT RUCKER	ALABAMA	538	5,881	91,488
ARMY	FORT SILL	FORT SILL	OKLAHOMA	1,162	10,433	111,372
ARMY	FORT STEWART	FORT STEWART	GEORGIA	1,315	15,020	87,571
ARMY	FORT WAINWRIGHT	FORT WAINWRIGHT	ALASKA	2,190	7,167	305,509
ARMY	GEORGIA ARNG	ATLANTA	GEORGIA	126	1,786	70,801
ARMY	GUAM ARNG (MOB)	FPO	GUAM	11	186	56,559
ARMY	HAWAII ARNG	HONOLULU	HAWAII	25	1,007	24,896
ARMY	HAWTHORNE AAP (GOCO)	HAWTHORNE	NEVADA	117	9,665	12,139
ARMY	HOLSTON AAP (GOCO)	KINGSPORT	TENNESSEE	165	1,835	89,907
ARMY	IDAHO ARNG	BOISE	IDAHO	88	726	120,675
ARMY	ILLINOIS ARNG	CAMP LINCOLN	ILLINOIS	173	2,565	67,290
ARMY	INDIANA ARNG	INDIANOPOLIS	INDIANA	402	4,052	99,181
ARMY	IOWA AAP (GOCO)	MIDDLETOWN	IOWA	379	4,008	94,623
ARMY	IOWA ARNG	JOHNSTON	IOWA	162	3,029	53,394
ARMY	JOINT BASE LEWIS MCCHORD	TACOMA	WASHINGTON	2,123	25,699	82,621
ARMY	JOINT BASE MYER-HENDERSON	FORT MYER	VIRGINIA	372	3,821	97,485
ARMY	KANSAS ARNG	TOPEKA	KANSAS	115	1,456	79,148
ARMY	KENTUCKY ARNG	FRANKFORT	KENTUCKY	88	1,605	54,741
ARMY	KWAJALEIN ATOLL	FPO	MARSHALL ISLANDS	826	3,140	262,908

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
ARMY	LAKE CITY AAP (GOCO)	INDEPENDENCE	MISSOURI	967	1,132	854,514
ARMY	LETTERKENNY ARMY DEPOT	CHAMBERSBURG	PENNSYLVANIA	474	4,663	101,615
ARMY	LIMA JSMC	LIMA	OHIO	519	1,617	321,200
ARMY	LOUISIANA ARNG	JOHNSON BARRACKS	LOUISIANA	168	3,097	54,139
ARMY	MAINE ARNG	CAMP KEYES	MAINE	53	1,029	51,399
ARMY	MARYLAND ARNG	BALTIMORE	MARYLAND	79	1,234	63,979
ARMY	MASSACHUSETTS ARNG	MILFORD	MASSACHUSETTS	67	1,818	36,760
ARMY	MCALESTER AAP	MCALESTER	OKLAHOMA	447	10,213	43,748
ARMY	MICHIGAN ARNG	LANSING	MICHIGAN	374	3,841	97,305
ARMY	MILAN AAP (GOCO)	MILAN	TENNESSEE	21	3,613	5,893
ARMY	MILITARY OCEAN TML	CONCORD	CALIFORNIA	11	249	42,289
ARMY	MINNESOTA ARNG	CAMP RIPLEY	MINNESOTA	285	4,091	69,545
ARMY	MISSISSIPPI ARNG	JACKSON	MISSISSIPPI	264	5,921	44,540
ARMY	MISSOURI ARNG	JEFFERSON CITY	MISSOURI	149	1,852	80,567
ARMY	MONTANA ARNG	HELENA	MONTANA	75	1,369	55,011
ARMY	MOT SUNNY POINT	SOUTHPORT	NORTH CAROLINA	17	363	47,934
ARMY	NEBRASKA ARNG	LINCOLN	NEBRASKA	107	1,613	66,423
ARMY	NEVADA ARNG	CARSON CITY	NEVADA	30	583	52,178
ARMY	NEW HAMPSHIRE ARNG	CONCORD	NEW HAMPSHIRE	39	651	59,339
ARMY	NEW JERSEY ARNG	LAWRENCEVILLE	NEW JERSEY	134	1,215	110,329
ARMY	NEW MEXICO ARNG	SANTA FE	NEW MEXICO	69	783	87,510
ARMY	NEW YORK ARNG	LATHAM	NEW YORK	169	2,502	67,686
ARMY	NORTH CAROLINA ARNG	RALEIGH	NORTH CAROLINA	124	1,426	87,167
ARMY	NORTH DAKOTA ARNG	BISMARK	NORTH DAKOTA	133	1,753	76,144
ARMY	OHIO ARNG	COLUMBUS	OHIO	175	3,392	51,498
ARMY	OKLAHOMA ARNG	OKLAHOMA CITY	OKLAHOMA	124	1,907	65,102

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
ARMY	OREGON ARNG	SALEM	OREGON	105	2,097	49,976
ARMY	PARKS CSTC	DUBLIN	CALIFORNIA	46	1,209	37,734
ARMY	PENNSYLVANIA ARNG	ANNVILLE	PENNSYLVANIA	354	4,920	71,990
ARMY	PICATINNY ARSENAL	DOVER	NEW JERSEY	544	3,306	164,679
ARMY	PINE BLUFF ARSENAL	WHITE HALL	ARKANSAS	314	3,611	86,821
ARMY	PRESIDIO OF MONTEREY	MONTEREY	CALIFORNIA	191	2,645	72,060
ARMY	PUEBLO CHEMICAL DEPOT	PUEBLO	COLORADO	28	3,669	7,621
ARMY	PUERTO RICO ARNG (MOB)	SAN JUAN	PUERTO RICO	55	1,501	36,516
ARMY	RADFORD AAP (GOCO)	RADFORD	VIRGINIA	198	2,078	95,221
ARMY	RED RIVER DEPOT	TEXARKANA	TEXAS	674	7,246	93,084
ARMY	REDSTONE ARSENAL	HUNTSVILLE	ALABAMA	1,295	14,340	90,278
ARMY	RHODE ISLAND ARNG	CRANSTON	RHODE ISLAND	61	1,252	48,794
ARMY	ROCK ISLAND ARSENAL	ROCK ISLAND	ILLINOIS	689	6,473	106,427
ARMY	SCRANTON AAP	SCRANTON	PENNSYLVANIA	12	385	30,753
ARMY	SIERRA ARMY DEPOT	HERLONG SIERRA ORD-D	CALIFORNIA	132	5,191	25,500
ARMY	SOLDIER SYSTEMS CTR,	NATICK	MASSACHUSETTS	109	1,044	104,406
ARMY	SOUTH CAROLINA ARNG	COLUMBIA	SOUTH CAROLINA	120	1,418	84,330
ARMY	SOUTH DAKOTA ARNG	RAPID CITY	SOUTH DAKOTA	61	1,243	48,825
ARMY	TENNESSEE ARNG	NASHVILLE	TENNESSEE	140	2,403	58,169
ARMY	TEXAS ARNG	CAMP MABRY	TEXAS	177	3,256	54,509
ARMY	TOBYHANNA ARMY DEPOT	TOBYHANNA	PENNSYLVANIA	592	4,588	129,109
ARMY	TOOELE ARMY DEPOT	TOOELE	UTAH	81	3,778	21,466
ARMY	USAG ANSBACH	FPO	GERMANY	323	7,049	45,806
ARMY	USAG BAVARIA	FPO	GERMANY	1,435	24,368	58,894
ARMY	USAG BENELUX	FPO	BELGIUM	136	3,114	43,671
ARMY	USAG DAEGU	TAEGU	SOUTH KOREA	492	6,320	77,807

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
ARMY	USAG DETROIT ARSENAL	HARRISON TOWNSHIP	MICHIGAN	271	1,966	137,782
ARMY	USAG HAWAII	WAHIAWA	HAWAII	822	14,649	56,108
ARMY	USAG HUMPHREYS	CAMP HUMPHREYS	SOUTH KOREA	693	8,058	86,029
ARMY	USAG MIAMI	MIAMI	FLORIDA	92	812	113,140
ARMY	USAG RED CLOUD	UIJONG BU	SOUTH KOREA	1,074	9,829	109,309
ARMY	USAG RHEINLAND-PFALZ	FPO	GERMANY	1,193	24,482	48,722
ARMY	USAG STUTTGART	FPO	GERMANY	615	8,322	73,907
ARMY	USAG VICENZA	FPO	ITALY	626	7,958	78,691
ARMY	USAG WIESBADEN	FPO	GERMANY	637	11,803	53,936
ARMY	USAG YONGSAN	SEOUL	SOUTH KOREA	978	8,354	117,083
ARMY	UTAH ARNG	DRAPER	UTAH	102	1,785	57,289
ARMY	VERMONT ARNG	COLCHESTER	VERMONT	57	1,114	51,050
ARMY	VIRGIN ISLANDS ARNG (MOB)	FPO	VIRGIN ISLANDS	10	301	33,123
ARMY	VIRGINIA ARNG	FORT PICKETT	VIRGINIA	177	3,315	53,442
ARMY	WASHINGTON ARNG	CAMP MURRAY	WASHINGTON	51	834	61,595
ARMY	WATERVLIET ARSENAL	WATERVLIET	NEW YORK	310	2,152	143,973
ARMY	WEST POINT MIL RESERVATION	WEST POINT	NEW YORK	965	7,104	135,818
ARMY	WEST VIRGINIA ARNG	CHARLESTON	WEST VIRGINIA	206	2,107	97,769
ARMY	WHITE SANDS MISSILE RANGE	WHITE SANDS	NEW MEXICO	299	4,286	69,876
ARMY	WISCONSIN ARNG	MADISON	WISCONSIN	203	2,076	97,731
ARMY	WYOMING ARNG	CHYENNE	WYOMING	79	823	95,480
ARMY	YUMA PROVING GROUND	YUMA	ARIZONA	139	1,799	77,504
NAVY	CAMP LEMONNIER DJBOUTI	FPO	DJBOUTI	820	1,331	615,973
NAVY	CBC GULFPORT MS	GULFPORT	MISSISSIPPI	144	4,661	30,998
NAVY	CFA CHINHAE	FPO	KOREA, REPUBLIC OF	28	419	67,279

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
NAVY	CFA OKINAWA JA	FPO	JAPAN	53	805	66,422
NAVY	CFA SASEBO JA	FPO	JAPAN	286	4,318	66,204
NAVY	CFA YOKOSUKA JA	FPO	JAPAN	2,826	13,642	207,175
NAVY	FRC EAST CHERRY POINT NC	CHERRY POINT	NORTH CAROLINA	548	1,926	284,408
NAVY	JB ANACOSTIA BOLLING	JOINT BASE ANACOSTIA BOLLING	DISTRICT OF COLUMBIA	427	4,769	89,480
NAVY	JEB LITTLE CREEK-FORT STORY VA	VIRGINIA BEACH	VIRGINIA	608	6,071	100,105
NAVY	NAF ATSUGI JA	FPO	JAPAN	522	4,204	124,137
NAVY	NAF EL CENTRO CA	EL CENTRO	CALIFORNIA	66	1,194	55,025
NAVY	NAF MISAWA JA	FPO	JAPAN	9	18	505,556
NAVY	NAS CORPUS CHRISTI TX	CORPUS CHRISTI	TEXAS	278	2,912	95,313
NAVY	NAS FALLON NV	FALLON	NEVADA	195	2,188	89,132
NAVY	NAS JACKSONVILLE FL	JACKSONVILLE	FLORIDA	940	8,244	113,994
NAVY	NAS JRB FORT WORTH TX	FORT WORTH	TEXAS	267	3,434	77,854
NAVY	NAS JRB NEW ORLEANS LA	NEW ORLEANS	LOUISIANA	180	2,283	78,717
NAVY	NAS KEY WEST FL	KEY WEST	FLORIDA	300	2,926	102,526
NAVY	NAS KINGSVILLE TX	KINGSVILLE	TEXAS	106	1,195	88,301
NAVY	NAS LEMOORE CA	LEMOORE	CALIFORNIA	243	3,575	67,860
NAVY	NAS MERIDIAN MS	MERIDIAN	MISSISSIPPI	175	1,602	109,101
NAVY	NAS OCEANA VA	VIRGINIA BEACH	VIRGINIA	749	7,676	97,517
NAVY	NAS PATUXENT RIVER MD	PATUXENT RIVER	MARYLAND	1,003	8,283	121,129
NAVY	NAS PENSACOLA FL	PENSACOLA	FLORIDA	1,027	11,480	89,424
NAVY	NAS SIGONELLA IT	FPO	ITALY	217	3,113	69,724
NAVY	NAS WHIDBEY ISLAND WA	OAK HARBOR	WASHINGTON	422	3,914	107,747
NAVY	NAS WHITING FIELD MILTON FL	MILTON	FLORIDA	123	1,337	91,870

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
NAVY	NAVBASE CORONADO SAN DIEGO CA	SAN DIEGO	CALIFORNIA	1,312	13,917	94,284
NAVY	NAVBASE GUAM	FPO	GUAM	460	7,863	58,470
NAVY	NAVBASE KITSAP BREMERTON WA	BREMERTON	WASHINGTON	1,984	13,749	144,309
NAVY	NAVBASE POINT LOMA CA	SAN DIEGO	CALIFORNIA	422	6,317	66,869
NAVY	NAVBASE SAN DIEGO CA	SAN DIEGO	CALIFORNIA	1,129	9,201	122,755
NAVY	NAVBASE VENTURA CTY PT MUGU CA	POINT MUGU	CALIFORNIA	340	9,223	36,837
NAVY	NAVHOSP BEAUFORT SC	BEAUFORT	SOUTH CAROLINA	84	431	194,408
NAVY	NAVHOSP BREMERTON WA	BREMERTON	WASHINGTON	86	329	262,219
NAVY	NAVHOSP CAMP PENDLETON CA	CAMP PENDLETON	CALIFORNIA	118	1,353	86,844
NAVY	NAVHOSP GUAM	FPO	GUAM	60	333	179,580
NAVY	NAVHOSP OKINAWA JA	FPO	JAPAN	68	629	107,790
NAVY	NAVHOSP TWENTYNINE PALMS CA	TWENTYNINE PALMS	CALIFORNIA	45	218	207,523
NAVY	NAVMAG INDIAN ISLAND WA	PORT HADLOCK	WASHINGTON	14	346	41,301
NAVY	NAVSTA EVERETT WA	EVERETT	WASHINGTON	120	1,496	80,154
NAVY	NAVSTA GREAT LAKES IL	GREAT LAKES	ILLINOIS	1,342	9,528	140,797
NAVY	NAVSTA GUANTANAMO BAY CU	FPO	CUBA	1,065	6,687	159,320
NAVY	NAVSTA MAYPORT FL	JACKSONVILLE	FLORIDA	196	2,901	67,518
NAVY	NAVSTA NEWPORT RI	NEWPORT	RHODE ISLAND	607	6,125	99,179
NAVY	NAVSTA NORFOLK VA	NORFOLK	VIRGINIA	2,130	16,217	131,349
NAVY	NAVSTA PEARL HARBOR HI	PEARL HARBOR	HAWAII	705	19,464	36,202
NAVY	NAVSTA ROTA SP	FPO	SPAIN	188	4,194	44,800
NAVY	NAVSUPPU SARATOGA SPRINGS NY	SARATOGA SPRINGS	NEW YORK	3	205	14,439

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
NAVY	NAWS CHINA LAKE CA	CHINA LAKE	CALIFORNIA	552	4,651	118,665
NAVY	NIOC SUGAR GROVE WV	SUGAR GROVE	WEST VIRGINIA	19	211	87,773
NAVY	NOSC MIDLANT WASHINGTON DC	NORFOLK	VIRGINIA	80	716	111,913
NAVY	NOSC MIDSOUTH	MILLINGTON	TENNESSEE	18	398	45,653
NAVY	NOSC MIDWEST	GREAT LAKES	ILLINOIS	30	1,453	20,571
NAVY	NOSC NE NEWPORT RI	NEWPORT	RHODE ISLAND	31	451	68,537
NAVY	NOSC NORTHWEST EVERETT WA	EVERETT	WASHINGTON	34	325	104,831
NAVY	NOSC SOUTHWEST SAN DIEGO CA	SAN DIEGO	CALIFORNIA	14	470	29,915
NAVY	NSA ANDERSEN	FPO	GUAM	384	6,977	54,994
NAVY	NSA ANNAPOLIS MD	ANNAPOLIS	MARYLAND	746	5,848	127,536
NAVY	NSA BAHRAIN	FPO	BAHRAIN	255	2,650	96,174
NAVY	NSA BETHESDA	BETHESDA	MARYLAND	1,137	7,748	146,789
NAVY	NSA CRANE IN	CRANE	INDIANA	783	4,242	184,606
NAVY	NSA HAMPTON ROADS VA	NORFOLK	VIRGINIA	987	7,503	131,527
NAVY	NSA MECHANICSBURG PA	MECHANICSBURG	PENNSYLVANIA	749	12,202	61,366
NAVY	NSA MID SOUTH MILLINGTON TN	MILLINGTON	TENNESSEE	197	2,533	77,710
NAVY	NSA MONTEREY CA	MONTEREY	CALIFORNIA	137	1,820	75,516
NAVY	NSA NAPLES IT	FPO	ITALY	377	5,699	66,161
NAVY	NSA ORLANDO FL	ORLANDO	FLORIDA	22	306	70,359
NAVY	NSA PANAMA CITY FL	PANAMA CITY BEACH	FLORIDA	201	1,458	137,606
NAVY	NSA SOUDA BAY GR	FPO	GREECE	33	490	67,367
NAVY	NSA SOUTH POTOMAC DAHLGREN VA	DAHLGREN	VIRGINIA	2,230	6,571	339,346
NAVY	NSA WASHINGTON DC	WASHINGTON NAVY YARD	DISTRICT OF COLUMBIA	1,762	11,750	149,970

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
NAVY	NSF DIEGO GARCIA	FPO	INDIAN OCEAN	694	2,729	254,481
NAVY	NSS NORFOLK NAVAL SHIPYARD VA	NORFOLK	VIRGINIA	1,052	7,568	138,944
NAVY	NSY BOS PORTSMOUTH NH	PORTSMOUTH	NEW HAMPSHIRE	1,109	3,853	287,724
NAVY	PMRF BARKING SANDS HI	KEKAHA	HAWAII	59	695	85,525
NAVY	SINGAPORE AREA COORDINATOR	FPO	SINGAPORE	29	632	46,566
NAVY	SUBASE KINGS BAY GA	KINGS BAY	GEORGIA	725	5,335	135,826
NAVY	SUBASE NEW LONDON CT	GROTON	CONNECTICUT	626	3,245	193,060
NAVY	WPNSTA EARLE COLTS NECK NJ	COLTS NECK	NEW JERSEY	152	1,290	118,078
NAVY	WPNSTA SEAL BEACH CA	SEAL BEACH	CALIFORNIA	95	2,098	45,219
NAVY	WPNSTA YORKTOWN VA	YORKTOWN	VIRGINIA	207	5,705	36,347
NAVY	WV ABL MINERAL CO	SHORT GAP	WEST VIRGINIA	641	1,129	567,635
USMC	CG MCAGCC TWENTYNINE PALMS CA	TWENTYNINE PALMS	CALIFORNIA	1,013	6,865	147,531
USMC	CG MCB CAMP BUTLER JA	FPO	JAPAN	1,083	17,454	62,041
USMC	CG MCB CAMP LEJEUNE NC	CAMP LEJEUNE	NORTH CAROLINA	3,091	24,887	124,215
USMC	CG MCB CAMP PENDLETON CA	CAMP PENDLETON	CALIFORNIA	942	21,099	44,647
USMC	CG MCCDC QUANTICO VA	QUANTICO	VIRGINIA	976	8,344	116,927
USMC	CG MCLB ALBANY GA	ALBANY	GEORGIA	317	7,032	45,145
USMC	FIRST MCD GARDEN CITY LI NY	LONG ISLAND	NEW YORK	71	166	430,482
USMC	MARBKS WASHINGTON DC	WASHINGTON	DISTRICT OF COLUMBIA	49	623	79,069
USMC	MARCORCRUITDEP PARRIS ISLAND SC	PARRIS ISLAND	SOUTH CAROLINA	488	3,935	124,112
USMC	MARCORCRUITDEP SAN DIEGO CA	SAN DIEGO	CALIFORNIA	223	2,798	79,786
USMC	MARFORRES NEW ORLEANS	NEW ORLEANS	LOUISIANA	138	1,860	74,022

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
USMC	MARINE CORPS AIR STATION CAMP PENDLETON	CAMP PENDLETON	CALIFORNIA	31	885	34,802
USMC	MCAS BEAUFORT SC	BEAUFORT	SOUTH CAROLINA	185	2,548	72,732
USMC	MCAS CHERRY PT NC	CHERRY POINT	NORTH CAROLINA	762	6,524	116,810
USMC	MCAS IWAKUNI JA	FPO	JAPAN	698	6,373	109,554
USMC	MCAS MIRAMAR	SAN DIEGO	CALIFORNIA	155	5,718	27,055
USMC	MCAS YUMA AZ	YUMA	ARIZONA	196	3,107	63,190
USMC	MCB HAWAII KANEOHE BAY	KANEOHE BAY	HAWAII	320	6,765	47,375
USMC	MCLB BARSTOW CA	BARSTOW	CALIFORNIA	238	4,625	51,440
USMC	MCMWTC BRIDGEPORT CA	BRIDGEPORT	CALIFORNIA	57	373	152,842
USMC	MCSF BLOUNT ISLAND FL	JACKSONVILLE	FLORIDA	23	1,099	21,165
AIR FORCE	ABRAHAM LINCOLN CAPITAL AIRPORT	SPRINGFIELD	ILLINOIS	25	332	73,916
AIR FORCE	AIR NATIONAL GUARD READINESS CENTER (ANGRC)	ANDREWS AFB	MARYLAND	24	348	70,172
AIR FORCE	ALPENA COUNTY REGIONAL AIRPORT	ALPENA	MICHIGAN	42	565	74,619
AIR FORCE	ALTUS AIR FORCE BASE	ALTUS	OKLAHOMA	266	2,421	109,806
AIR FORCE	ANDERSEN AIR FORCE BASE	FPO	GUAM	3	61	48,361
AIR FORCE	ARKANSAS NATIONAL GUARD	LITTLE ROCK	ARKANSAS	274	4,336	63,192
AIR FORCE	ARNOLD AIR STATION	ARNOLD A F STATION	TENNESSEE	618	1,794	344,337
AIR FORCE	ATLANTIC CITY INTERNATIONAL AIRPORT	EGG HARBOR TOWNSHIP	NEW JERSEY	47	495	94,525
AIR FORCE	AVIANO AIR BASE	FPO	ITALY	283	4,220	66,945
AIR FORCE	BANGOR INTERNATIONAL AIRPORT (ANG)	BANGOR	MAINE	56	511	110,391
AIR FORCE	BARKSDALE AIR FORCE BASE	BARKSDALE AF BASE	LOUISIANA	450	5,096	88,348

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
AIR FORCE	BARNES MUNICIPAL AIRPORT ANG	WESTFIELD	MASSACHUSETTS	44	480	92,438
AIR FORCE	BEALE AIR FORCE BASE	BEALE AFB	CALIFORNIA	252	3,093	81,562
AIR FORCE	BIRMINGHAM INTERNATIONAL AIRPORT	BIRMINGHAM	ALABAMA	34	365	92,082
AIR FORCE	BOISE AIR TERMINAL (ANG)	BOISE	IDAHO	27	566	47,915
AIR FORCE	BRADLEY INTERNATIONAL AIRPORT (ANG)	WINDSOR LOCKS	CONNECTICUT	31	402	76,692
AIR FORCE	BUCKLEY AIR FORCE BASE	AURORA	COLORADO	128	1,506	85,093
AIR FORCE	BUCKLEY AIR FORCE BASE	AURORA	COLORADO	73	588	123,895
AIR FORCE	BURLINGTON INTERNATIONAL AIRPORT (ANG)	SOUTH BURLINGTON	VERMONT	23	479	47,641
AIR FORCE	CAMP BLANDING MILITARY RESERVATION (ANG)	STARKE	FLORIDA	4	124	33,790
AIR FORCE	CAMP MURRAY ANG STATION	TACOMA	WASHINGTON	11	294	37,925
AIR FORCE	CAMP PENDLETON MILITARY RESERVATION(ANG)	VIRGINIA BEACH	VIRGINIA	6	124	44,919
AIR FORCE	CAMP PERRY ANG STATION	PORT CLINTON	OHIO	6	103	54,854
AIR FORCE	CANNON AIR FORCE BASE	CANNON AFB	NEW MEXICO	347	3,056	113,390
AIR FORCE	CARSWELL AIR RESERVE STATION	FORT WORTH	TEXAS	16	360	45,111
AIR FORCE	CHANNEL ISLANDS ANG STATION	PORT HUENEME	CALIFORNIA	13	345	39,072
AIR FORCE	CHARLESTON AIR FORCE BASE	CHARLESTON	SOUTH CAROLINA	730	8,719	83,744
AIR FORCE	CHARLOTTE/DOUGLAS INT AIRPORT (ANG)	CHARLOTTE	NORTH CAROLINA	36	569	62,970
AIR FORCE	CHEYENNE REGIONAL AIRPORT	CHEYENNE	WYOMING	48	432	110,417
AIR FORCE	COLUMBUS AIR FORCE BASE	COLUMBUS	MISSISSIPPI	149	1,539	97,115
AIR FORCE	DANE COUNTY REGIONAL AIRPORT-TRUAX FIELD	MADISON	WISCONSIN	36	476	74,853

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
AIR FORCE	DAVIS-MONTHAN AIR FORCE BASE	TUCSON	ARIZONA	332	4,426	75,014
AIR FORCE	DES MOINES INTERNATIONAL AIRPORT ANG	DES MOINES	IOWA	35	417	83,573
AIR FORCE	DOBBINS AIR RESERVE BASE	MARIETTA	GEORGIA	91	1,014	90,168
AIR FORCE	DOVER AIR FORCE BASE	DOVER	DELAWARE	449	3,508	128,007
AIR FORCE	DULUTH INTERNATIONAL AIRPORT (ANG)	DULUTH	MINNESOTA	58	479	121,357
AIR FORCE	DYESS AIR FORCE BASE	ABILENE	TEXAS	280	3,271	85,659
AIR FORCE	EARECKSON AIR STATION	ADAK STATION	ALASKA	379	2,768	136,842
AIR FORCE	EDWARDS AIR FORCE BASE	LANCASTER	CALIFORNIA	706	6,687	105,647
AIR FORCE	EGLIN AIR FORCE AUXILIARY FIELD #9	EGLIN AFB	FLORIDA	482	4,341	110,921
AIR FORCE	EGLIN AIR FORCE BASE	VALPARAISO	FLORIDA	1,194	10,596	112,717
AIR FORCE	EIELSON AIR FORCE BASE	MOOSE CREEK	ALASKA	27	302	88,377
AIR FORCE	EIELSON AIR FORCE BASE	MOOSE CREEK	ALASKA	2,058	3,988	515,993
AIR FORCE	ELLINGTON FIELD	HOUSTON	TEXAS	41	523	77,820
AIR FORCE	ELLSWORTH AIR FORCE BASE	ELLSWORTH AFB	SOUTH DAKOTA	475	4,315	110,093
AIR FORCE	EWVRA SHEPHERD FIELD ANG	MARTINSBURG	WEST VIRGINIA	75	640	117,297
AIR FORCE	FAIRCHILD AIR FORCE BASE	AIRWAY HEIGHTS	WASHINGTON	16	362	45,193
AIR FORCE	FAIRCHILD AIR FORCE BASE	AIRWAY HEIGHTS	WASHINGTON	417	4,136	100,725
AIR FORCE	FORBES FIELD ANG	TOPEKA	KANSAS	47	481	97,963
AIR FORCE	FORT SMITH MUNICIPAL AIRPORT ANG	FORT SMITH	ARKANSAS	20	418	48,589
AIR FORCE	FORT WAYNE INTERNATIONAL AIRPORT	FORT WAYNE	INDIANA	40	430	92,767
AIR FORCE	FRANCIS E WARREN AIR FORCE BASE	CHEYENNE	WYOMING	373	3,117	119,731

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
AIR FORCE	FRANCIS S GABRESKI AIRPORT (ANG)	WESTHAMPTON BEACH	NEW YORK	39	360	108,500
AIR FORCE	FRESNO YOSEMITE INTERNATIONAL	FRESNO	CALIFORNIA	22	444	49,482
AIR FORCE	FT INDIANTOWN GAP ANG STATION	ANNVILLE	PENNSYLVANIA	17	348	49,598
AIR FORCE	GENERAL MITCHELL INTERNATIONAL APT (ANG)	MILWAUKEE	WISCONSIN	34	384	88,620
AIR FORCE	GENERAL WAYNE A. DOWNING PEORIA INTERNATIONAL AIRPORT (ANG)	PEORIA	ILLINOIS	33	448	74,018
AIR FORCE	GOODFELLOW AIR FORCE BASE	SAN ANGELO	TEXAS	225	2,574	87,246
AIR FORCE	GRAND FORKS AIR FORCE BASE	GRAND FORKS AFB	NORTH DAKOTA	287	2,623	109,462
AIR FORCE	GREAT FALLS IAP ANG	GREAT FALLS	MONTANA	34	428	78,598
AIR FORCE	GRISSOM AIR RESERVE BASE	KOKOMO	INDIANA	103	1,047	98,415
AIR FORCE	GULFPORT-BILOXI REGIONAL AIRPORT (ANG)	GULFPORT	MISSISSIPPI	32	639	49,484
AIR FORCE	HANSCOM AIR FORCE BASE	BEDFORD	MASSACHUSETTS	579	2,436	237,672
AIR FORCE	HARRISBURG IAP	MIDDLETOWN	PENNSYLVANIA	25	330	76,818
AIR FORCE	HECTOR INTERNATIONAL AIRPORT (ANG)	FARGO	NORTH DAKOTA	37	492	75,366
AIR FORCE	HICKAM AFB	HICKAM A F BASE	HAWAII	37	1,048	35,382
AIR FORCE	HILL AIR FORCE BASE	OGDEN	UTAH	1,869	12,536	149,110
AIR FORCE	HOLLOMAN AIR FORCE BASE	ALAMOGORDO	NEW MEXICO	603	5,389	111,954
AIR FORCE	HOMESTEAD AIR RESERVE BASE	HOMESTEAD	FLORIDA	62	1,112	55,414
AIR FORCE	HULMAN REGIONAL AIRPORT	TERRE HAUTE	INDIANA	50	393	128,397
AIR FORCE	INCIRLIK AIR BASE ADANA	FPO	TURKEY	257	4,809	53,425

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
AIR FORCE	JACKSON INTERNATIONAL AIRPORT	FLOWOOD	MISSISSIPPI	51	546	93,205
AIR FORCE	JACKSONVILLE IAP ANG	JACKSONVILLE	FLORIDA	27	470	57,489
AIR FORCE	JBSA - LACKLAND	SAN ANTONIO	TEXAS	3,908	35,340	110,581
AIR FORCE	JEFFERSON BARRACKS ANG STATION	LEMAY	MISSOURI	13	220	60,591
AIR FORCE	JOE FOSS FIELD ANG	SIOUX FALLS	SOUTH DAKOTA	40	425	93,106
AIR FORCE	JOINT BASE ANDREWS-NAVAL AIR FACILITY WASHINGTON	ANDREWS AFB	MARYLAND	40	490	82,041
AIR FORCE	JOINT BASE ANDREWS-NAVAL AIR FACILITY WASHINGTON	ANDREWS AFB	MARYLAND	596	5,711	104,274
AIR FORCE	JOINT BASE ELMENDORF-FT RICHARDSON	ELMENDORF AFB	ALASKA	53	556	94,784
AIR FORCE	JOINT BASE ELMENDORF-FT RICHARDSON	ELMENDORF AFB	ALASKA	1,621	11,789	137,482
AIR FORCE	KADENA AIR BASE	KADENA AIR BASE OKINAWA	JAPAN	1,235	23,664	52,198
AIR FORCE	KEESLER AIR FORCE BASE	BILOXI	MISSISSIPPI	675	6,721	100,420
AIR FORCE	KELLY FIELD ANNEX (LACKLAND AFB)	LACKLAND AFB	TEXAS	35	378	93,783
AIR FORCE	KEY FIELD AIR NATIONAL GUARD	MERIDIAN	MISSISSIPPI	31	409	75,672
AIR FORCE	KIRTLAND AIR FORCE BASE	ALBUQUERQUE	NEW MEXICO	18	310	58,839
AIR FORCE	KIRTLAND AIR FORCE BASE	ALBUQUERQUE	NEW MEXICO	720	6,940	103,736
AIR FORCE	KLAMATH FALLS AIRPORT-KINGSLEY FIELD	KLAMATH FALLS	OREGON	34	486	69,218
AIR FORCE	KUNSAN AIR BASE	KUNSAN	KOREA, REPUBLIC OF	334	3,885	86,008
AIR FORCE	LAJES FIELD	FPO	PORTUGAL	71	2,574	27,413

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
AIR FORCE	LAMBERT ST LOUIS IAP ANG	ST. LOUIS	MISSOURI	17	294	57,721
AIR FORCE	LANGLEY AIR FORCE BASE	LANGLEY AFB	VIRGINIA	1,137	12,141	93,668
AIR FORCE	LAUGHLIN AIR FORCE BASE	DEL RIO	TEXAS	103	1,790	57,469
AIR FORCE	LINCOLN MUNICIPAL AIRPORT (ANG)	LINCOLN	NEBRASKA	31	355	86,028
AIR FORCE	LITTLE ROCK AIR FORCE BASE	LITTLE ROCK	ARKANSAS	29	311	92,026
AIR FORCE	LITTLE ROCK AIR FORCE BASE	LITTLE ROCK	ARKANSAS	396	3,344	118,385
AIR FORCE	LOS ANGELES AIR FORCE BASE	EL SEGUNDO	CALIFORNIA	96	1,109	86,366
AIR FORCE	LOUISVILLE INTERNATIONAL AIRPORT - STANDIFORD FIELD	LOUISVILLE	KENTUCKY	27	417	65,923
AIR FORCE	LUIS MUNOZ MARIN INTERNATIONAL AIRPORT	CAROLINA	PUERTO RICO	26	475	54,926
AIR FORCE	LUKE AIR FORCE BASE	GLENDALE	ARIZONA	237	3,656	64,754
AIR FORCE	MACDILL AIR FORCE BASE	TAMPA	FLORIDA	513	5,083	100,964
AIR FORCE	MALMSTROM AIR FORCE BASE	MALMSTROM AFB	MONTANA	485	2,995	161,860
AIR FORCE	MANSFIELD LAHM AIRPORT ANG	MANSFIELD	OHIO	40	353	112,776
AIR FORCE	MARCH AIR RESERVE BASE	RIVERSIDE	CALIFORNIA	119	1,971	60,193
AIR FORCE	MARCH AIR RESERVE BASE	RIVERSIDE	CALIFORNIA	43	303	140,759
AIR FORCE	MARTIN STATE AIRPORT ANG	MIDDLE RIVER	MARYLAND	31	442	71,041
AIR FORCE	MAXWELL AIR FORCE BASE	MONTGOMERY	ALABAMA	685	5,806	117,993
AIR FORCE	MCCONNELL AIR FORCE BASE	WICHITA	KANSAS	285	2,576	110,683
AIR FORCE	MCCONNELL AIR FORCE BASE	WICHITA	KANSAS	79	701	113,081
AIR FORCE	MCENTIRE JOINT NATIONAL GUARD BASE	EASTOVER	SOUTH CAROLINA	39	448	87,768
AIR FORCE	MCGHEE TYSON AIRPORT	LOUISVILLE	TENNESSEE	82	834	98,777
AIR FORCE	MCGUIRE AIR FORCE BASE	MCGUIRE AFB	NEW JERSEY	1,305	13,035	100,152
AIR FORCE	MCGUIRE AIR FORCE BASE	MCGUIRE AFB	NEW JERSEY	63	437	144,073

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
AIR FORCE	MEMPHIS INTERNATIONAL AIRPORT	MEMPHIS	TENNESSEE	55	586	93,737
AIR FORCE	MINNEAPOLIS-ST PAUL IAP-AIR RESERVE STN	MINNEAPOLIS	MINNESOTA	39	467	84,069
AIR FORCE	MINNEAPOLIS-ST PAUL IAP-AIR RESERVE STN	MINNEAPOLIS	MINNESOTA	71	710	99,592
AIR FORCE	MINOT AIR FORCE BASE	MINOT AFB	NORTH DAKOTA	519	4,112	126,170
AIR FORCE	MISAWA AIR BASE	MISAWA AFB	JAPAN	1,203	7,882	152,614
AIR FORCE	MOFFETT FLD ANG	MOUNTAIN VIEW	CALIFORNIA	13	392	34,413
AIR FORCE	MONTGOMERY REGIONAL AIRPORT (ANG) BASE	MONTGOMERY	ALABAMA	34	505	66,574
AIR FORCE	MOODY AIR FORCE BASE	MOODY AF BASE	GEORGIA	202	2,905	69,477
AIR FORCE	MORON AIR BASE	MORAN AB	SPAIN	30	733	40,682
AIR FORCE	MOUNTAIN HOME AIR FORCE BASE	ELMORE	IDAHO	298	3,313	89,867
AIR FORCE	NASHVILLE INTERNATIONAL AIRPORT	NASHVILLE	TENNESSEE	27	465	58,194
AIR FORCE	NELLIS AIR FORCE BASE	LAS VEGAS	NEVADA	838	9,268	90,390
AIR FORCE	NEW CASTLE COUNTY AIRPORT	WILMINGTON	DELAWARE	29	339	86,283
AIR FORCE	NEW ORLEANS NAS ANG	BELLE CHASSE	LOUISIANA	34	567	59,471
AIR FORCE	NIAGARA FALLS IAP-AIR RESERVE STATION	NIAGARA FALLS	NEW YORK	8	183	43,115
AIR FORCE	NIAGARA FALLS IAP-AIR RESERVE STATION	NIAGARA FALLS	NEW YORK	92	700	131,614
AIR FORCE	NORTH HIGHLANDS ANG STATION	NORTH HIGHLANDS	CALIFORNIA	6	133	44,060
AIR FORCE	OFFUTT AIR FORCE BASE	OFFUTT A.F.B.	NEBRASKA	811	6,329	128,210

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
AIR FORCE	OSAN AIR BASE	OSAN AFB	KOREA, REPUBLIC OF	681	7,658	88,971
AIR FORCE	OTIS AIR NATIONAL GUARD BASE	OTIS ANGB, MASHPEE	MASSACHUSETTS	60	727	82,421
AIR FORCE	PATRICK AIR FORCE BASE	PATRICK AFB	FLORIDA	777	7,153	108,658
AIR FORCE	PEASE INTERNATIONAL TRADEPORT	PORTSMOUTH	NEW HAMPSHIRE	49	536	92,108
AIR FORCE	PETERSON AIR FORCE BASE	COLORADO SPRINGS	COLORADO	2,246	6,794	330,583
AIR FORCE	PETERSON AIR FORCE BASE	COLORADO SPRINGS	COLORADO	0		#DIV/0!
AIR FORCE	PITTSBURGH IAP-AIR RESERVE STN	MOON	PENNSYLVANIA	49	570	86,018
AIR FORCE	PITTSBURGH INTERNATIONAL AIRPORT (ANG)	CORAOPOLIS	PENNSYLVANIA	58	450	129,244
AIR FORCE	PORTLAND INTERNATIONAL AIRPORT	PORTLAND	OREGON	55	821	67,089
AIR FORCE	QUONSET STATE AIRPORT ANG	NORTH KINGSTOWN	RHODE ISLAND	43	399	108,772
AIR FORCE	RAF ALCONBURY	FPO	UNITED KINGDOM	116	1,291	89,504
AIR FORCE	RAF CROUGHTON	FPO	UNITED KINGDOM	109	691	158,017
AIR FORCE	RAF FAIRFORD	FAIRFORD	UNITED KINGDOM	34	1,084	31,402
AIR FORCE	RAF LAKENHEATH	LAKENHEATH	UNITED KINGDOM	632	7,585	83,343
AIR FORCE	RAF MILDENHALL	MILDENHALL	UNITED KINGDOM	261	2,975	87,795
AIR FORCE	RAMSTEIN AIR BASE	RAMSTEIN	GERMANY	1,029	15,837	64,995
AIR FORCE	RENO TAHOE INTERNATIONAL AIRPORT	RENO	NEVADA	23	404	57,030
AIR FORCE	RICKENBACKER INTERNATION AIRPORT (ANG)	COLUMBUS	OHIO	52	534	96,854
AIR FORCE	ROBINS AIR FORCE BASE	ROBINS AF BASE	GEORGIA	65	716	90,433
AIR FORCE	ROBINS AIR FORCE BASE	ROBINS AF BASE	GEORGIA	1,839	12,307	149,450
AIR FORCE	ROSECRANS MEMORIAL AIRPORT	ST. JOSEPH	MISSOURI	24	390	62,308

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
AIR FORCE	SALT LAKE CITY INTERNATIONAL AIRPORT ANG	SALT LAKE CITY	UTAH	42	501	83,174
AIR FORCE	SAVANNAH/HILTON HEAD INTERNATIONAL AP	GARDEN CITY	GEORGIA	48	905	52,928
AIR FORCE	SCHENECTADY COUNTY AIRPORT ANG	SCOTIA	NEW YORK	42	428	97,570
AIR FORCE	SCHRIEVER AIR FORCE BASE	COLORADO SPRINGS	COLORADO	324	1,671	193,692
AIR FORCE	SCOTT AIR FORCE BASE	BELLEVILLE	ILLINOIS	29	340	86,294
AIR FORCE	SCOTT AIR FORCE BASE	BELLEVILLE	ILLINOIS	528	4,905	107,743
AIR FORCE	SELFRIDGE ANG BASE	MOUNT CLEMENS	MICHIGAN	187	1,609	115,979
AIR FORCE	SEYMOUR JOHNSON AIR FORCE BASE	SEYMOUR JOHNSON AFB	NORTH CAROLINA	287	3,211	89,377
AIR FORCE	SHAW AIR FORCE BASE	SHAW AF BASE	SOUTH CAROLINA	334	3,333	100,093
AIR FORCE	SHEPPARD AIR FORCE BASE	WICHITA FALLS	TEXAS	640	7,310	87,531
AIR FORCE	SIOUX GATEWAY AP/COL. BUD DAY FIELD(ANG)	SIOUX CITY	IOWA	37	477	77,191
AIR FORCE	SKY HARBOR INTERNATIONAL AIRPORT	PHOENIX	ARIZONA	18	276	65,833
AIR FORCE	SPANGDAHLEM AIR BASE	FPO	GERMANY	367	7,430	49,408
AIR FORCE	SPRINGFIELD BECKLEY MUNICIPAL AIRPORT	SPRINGFIELD	OHIO	40	504	79,246
AIR FORCE	STEWART INTERNATIONAL AIRPORT	NEWBURGH	NEW YORK	102	833	122,737
AIR FORCE	SYRACUSE HANCOCK FIELD ANG	SYRACUSE	NEW YORK	45	462	96,883
AIR FORCE	TINKER AIR FORCE BASE	OKLAHOMA CITY	OKLAHOMA	2,951	18,819	156,822
AIR FORCE	TOLEDO EXPRESS AIRPORT ANG	SWANTON	OHIO	28	379	73,166
AIR FORCE	TRAVIS AIR FORCE BASE	FAIRFIELD	CALIFORNIA	441	6,213	70,948

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
AIR FORCE	TUCSON INTERNATIONAL AIRPORT	TUCSON	ARIZONA	48	647	74,668
AIR FORCE	TULSA INTERNATIONAL AIRPORT	TULSA	OKLAHOMA	38	368	102,826
AIR FORCE	TYNDALL AIR FORCE BASE	PANAMA CITY BEACH	FLORIDA	340	3,859	88,119
AIR FORCE	USAF ACADEMY	AIR FORCE ACADEMY	COLORADO	861	6,621	129,983
AIR FORCE	VANCE AIR FORCE BASE	ENID	OKLAHOMA	124	1,369	90,811
AIR FORCE	VANDENBERG AIR FORCE BASE	LOMPOC	CALIFORNIA	460	4,713	97,696
AIR FORCE	VOLK FIELD	CAMP DOUGLAS	WISCONSIN	50	672	74,167
AIR FORCE	W K KELLOGG AIRPORT	BATTLE CREEK	MICHIGAN	42	410	101,390
AIR FORCE	WESTOVER AIR RESERVE BASE	SPRINGFIELD	MASSACHUSETTS	177	1,626	108,579
AIR FORCE	WHITEMAN AIR FORCE BASE	KNOB NOSTER	MISSOURI	547	3,670	148,924
AIR FORCE	WILL ROGERS WORLD AIRPORT	OKLAHOMA CITY	OKLAHOMA	26	355	73,887
AIR FORCE	WILLOW GROVE AIR RESERVE STATION	HORSHAM	PENNSYLVANIA	41	516	79,845
AIR FORCE	WRIGHT PATTERSON AIR FORCE BASE	WRIGHT-PATTERSON AFB	OHIO	2,469	15,053	164,047
AIR FORCE	YEAGER AIRPORT ANG	CHARLESTON	WEST VIRGINIA	42	420	100,214
AIR FORCE	YOKOTA AIR BASE	YOKOTA AFB	JAPAN	1,215	9,375	129,575
AIR FORCE	YOUNGSTOWN-WARREN REGIONAL AIRPORT ARS	VIENNA	OHIO	84	742	112,722
DCMA	DCMA(1)	CARSON	CALIFORNIA	9	85	100,588
DCMA	DCMA(2)	BRATENAHL	OHIO	10	78	124,231
DECA	99TH REGIONAL SUPPORT COMMAND	CORAOPOLIS	PENNSYLVANIA	7	43	157,442
DECA	ABERDEEN PROVING GROUND	ABERDEEN	MARYLAND	9	62	139,355
DECA	ALTUS AIR FORCE BASE	ALTUS	OKLAHOMA	9	58	147,414
DECA	ARNOLD AIR STATION	ARNOLD A F STATION	TENNESSEE	4	23	184,783

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
DECA	AVIANO AIR BASE	FPO	ITALY	8	64	124,219
DECA	BANGOR INTERNATIONAL AIRPORT (ANG)	BANGOR	MAINE	5	29	177,241
DECA	BARKSDALE AIR FORCE BASE	BARKSDALE AF BASE	LOUISIANA	13	104	123,846
DECA	BEALE AIR FORCE BASE	BEALE AFB	CALIFORNIA	6	75	86,000
DECA	BEALE AIR FORCE BASE	BEALE AFB	CALIFORNIA	12	88	140,227
DECA	BEALE AIR FORCE BASE	BEALE AFB	CALIFORNIA	8	27	295,185
DECA	BUCKLEY AIR FORCE BASE	AURORA	COLORADO	10	77	132,857
DECA	CAMP CASEY	TONG DU CHON	KOREA, REPUBLIC OF	2	17	88,824
DECA	CAMP HENRY	TAEGU	KOREA, REPUBLIC OF	1	8	76,250
DECA	CAMP HENRY	TAEGU	KOREA, REPUBLIC OF	2	16	116,875
DECA	CAMP HENRY	TAEGU	KOREA, REPUBLIC OF	6	38	146,053
DECA	CAMP HUMPHREYS	FPO	KOREA, REPUBLIC OF	4	19	211,579
DECA	CAMP RED CLOUD	UIJONG BU	KOREA, REPUBLIC OF	1	11	58,182
DECA	CAMP RED CLOUD	UIJONG BU	KOREA, REPUBLIC OF	1	10	108,000
DECA	CAMP ZAMA	SAGAMIHARA	JAPAN	10	186	53,280
DECA	CAMP ZAMA	SAGAMIHARA	JAPAN	6	67	87,910
DECA	CAMP ZAMA	SAGAMIHARA	JAPAN	2	13	129,231
DECA	CAMP ZAMA	SAGAMIHARA	JAPAN	1	2	275,000
DECA	CANNON AIR FORCE BASE	CANNON AFB	NEW MEXICO	7	58	115,172
DECA	CARLISLE BARRACKS	CARLISLE	PENNSYLVANIA	7	60	123,833

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
DECA	CBC GULFPORT MS	GULFPORT	MISSISSIPPI	8	31	266,452
DECA	CHARLESTON AIR FORCE BASE	CHARLESTON	SOUTH CAROLINA	12	86	137,674
DECA	CHARLESTON AIR FORCE BASE	CHARLESTON	SOUTH CAROLINA	12	64	184,063
DECA	COLUMBUS AIR FORCE BASE	COLUMBUS	MISSISSIPPI	4	49	82,449
DECA	COMBAT SUPPORT TRAINING CENTER AND CAMP PARKS	DUBLIN	CALIFORNIA	2	8	198,750
DECA	COMFLEACT SASEBO JA	SASEBO	JAPAN	3	20	130,000
DECA	COMFLEACT SASEBO JA	SASEBO	JAPAN	5	24	198,333
DECA	COMFLEACT YOKOSUKA JA	YOKOSUKA	JAPAN	16	96	166,979
DECA	COMFLEACT YOKOSUKA JA	YOKOSUKA	JAPAN	15	86	177,558
DECA	CSO NAS MOFFETT FIELD CA	MOFFETT FIELD	CALIFORNIA	3	52	66,731
DECA	DAVIS-MONTHAN AIR FORCE BASE	TUCSON	ARIZONA	14	115	124,870
DECA	DOVER AIR FORCE BASE	DOVER	DELAWARE	4	78	57,436
DECA	DUGWAY PROVING GROUND	DUGWAY	UTAH	3	18	151,667
DECA	DYESS AIR FORCE BASE	ABILENE	TEXAS	8	80	93,750
DECA	EDWARDS AIR FORCE BASE	LANCASTER	CALIFORNIA	7	60	109,333
DECA	EGLIN AIR FORCE BASE	VALPARAISO	FLORIDA	16	107	153,645
DECA	EGLIN AIR FORCE BASE	VALPARAISO	FLORIDA	12	63	197,143
DECA	EIELSON AIR FORCE BASE	MOOSE CREEK	ALASKA	7	42	168,571
DECA	ELLSWORTH AIR FORCE BASE	SAN ANGELO	SOUTH DAKOTA	10	72	134,028
DECA	FAIRCHILD AIR FORCE BASE	AIRWAY HEIGHTS	WASHINGTON	13	85	149,765
DECA	FLEET ACTIVITIES CHINHAE KS	CHINHAE	KOREA, REPUBLIC OF	2	11	160,909
DECA	FORT BELVOIR	FORT BELVOIR	VIRGINIA	19	129	146,744
DECA	FORT BENNING	COLUMBUS	GEORGIA	0	3	156,667
DECA	FORT BENNING	COLUMBUS	GEORGIA	19	118	163,898

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
DECA	FORT BLISS	EL PASO	TEXAS	15	123	120,894
DECA	FORT BRAGG	FORT BRAGG	NORTH CAROLINA	12	95	123,158
DECA	FORT BRAGG	FORT BRAGG	NORTH CAROLINA	23	118	197,797
DECA	FORT BUCHANAN	GUAYNABO	PUERTO RICO	11	95	115,053
DECA	FORT CAMPBELL	FORT CAMPBELL	KENTUCKY	16	122	134,590
DECA	FORT CARSON	COLORADO SPRINGS	COLORADO	16	122	128,607
DECA	FORT DETRICK	FREDERICK	MARYLAND	5	58	91,034
DECA	FORT DETRICK	FREDERICK	MARYLAND	7	39	172,564
DECA	FORT DRUM	EVANS MILLS	NEW YORK	13	83	156,265
DECA	FORT GEORGE G MEADE	FORT MEADE	MARYLAND	17	118	142,458
DECA	FORT GORDON	AUGUSTA	GEORGIA	11	92	124,348
DECA	FORT GREELY	DELTA JUNCTION	ALASKA	4	25	174,800
DECA	FORT HAMILTON	NEW YORK CITY	NEW YORK	7	50	136,800
DECA	FORT HOOD	KILLEEN	TEXAS	10	106	97,642
DECA	FORT HOOD	KILLEEN	TEXAS	27	128	211,328
DECA	FORT HUACHUCA	SIERRA VISTA	ARIZONA	10	78	123,077
DECA	FORT JACKSON	COLUMBIA	SOUTH CAROLINA	13	130	101,231
DECA	FORT KNOX	MIDDLETOWN	KENTUCKY	13	122	103,525
DECA	FORT LEAVENWORTH	FORT LEAVENWORTH	KANSAS	13	74	170,541
DECA	FORT LEE	FORT LEE	VIRGINIA	25	242	103,347
DECA	FORT LEE	FORT LEE	VIRGINIA	9	81	116,790
DECA	FORT LEONARD WOOD	FORT LEONARD WOOD	MISSOURI	12	71	167,746
DECA	FORT MCCOY	SPARTA	WISCONSIN	3	16	196,250
DECA	FORT POLK	FORT POLK	LOUISIANA	11	82	129,268
DECA	FORT RILEY	FORT RILEY	KANSAS	17	113	152,920
DECA	FORT RUCKER	FORT RUCKER	ALABAMA	9	85	105,176

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
DECA	FORT SILL	FORT SILL	OKLAHOMA	10	102	93,235
DECA	FORT STEWART	HINESVILLE	GEORGIA	12	95	126,105
DECA	FORT STEWART	HINESVILLE	GEORGIA	9	58	152,414
DECA	FORT WAINWRIGHT	FORT WAINWRIGHT	ALASKA	20	104	196,923
DECA	FRANCIS E WARREN AIR FORCE BASE	CHEYENNE	WYOMING	7	77	91,169
DECA	GOODFELLOW AIR FORCE BASE	SAN ANGELO	TEXAS	7	57	125,263
DECA	GRAND FORKS AIR FORCE BASE	GRAND FORKS AFB	NORTH DAKOTA	4	41	93,415
DECA	HANSCOM AIR FORCE BASE	BEDFORD	MASSACHUSETTS	10	74	131,486
DECA	HILL AIR FORCE BASE	OGDEN	UTAH	18	87	205,747
DECA	HOLLOMAN AIR FORCE BASE	ALAMOGORDO	NEW MEXICO	8	69	112,174
DECA	INCIRLIK AIR BASE ADANA	FPO	TURKEY	1	15	95,333
DECA	INCIRLIK AIR BASE ADANA	FPO	TURKEY	7	67	104,478
DECA	JBAB ANACOSTIA BOLLING	WASHINGTON	DISTRICT OF COLUMBIA	11	72	159,306
DECA	JBPHH PEARL HARBOR - HICKAM HAWAII	PEARL HARBOR	HAWAII	10	98	105,306
DECA	JBPHH PEARL HARBOR - HICKAM HAWAII	PEARL HARBOR	HAWAII	13	115	116,609
DECA	JBSA - FORT SAM HOUSTON	FORT SAM HOUSTON	TEXAS	16	104	155,673
DECA	JBSA - LACKLAND	SAN ANTONIO	TEXAS	21	117	179,402
DECA	JBSA - RANDOLPH	SAN ANTONIO	TEXAS	15	97	159,278
DECA	JNTEXPBASE LITTLE CREEK FS VA	NORFOLK	VIRGINIA	14	100	138,400
DECA	JOINT BASE ANDREWS-NAVAL AIR FACILITY WASHINGTON	ANDREWS AFB	MARYLAND	17	113	147,168
DECA	JOINT BASE ELMENDORF-FT RICHARDSON	ELMENDORF AFB	ALASKA	17	105	158,286

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
DECA	JOINT BASE LEWIS-MCCHORD	TACOMA	WASHINGTON	17	148	111,757
DECA	JOINT BASE LEWIS-MCCHORD	TACOMA	WASHINGTON	12	105	114,571
DECA	JOINT BASE MYER-HENDERSON HALL	ARLINGTON	VIRGINIA	7	74	100,811
DECA	KADENA AIR BASE	KADENA AIR BASE OKINAWA	JAPAN	16	87	181,954
DECA	KEESLER AIR FORCE BASE	BILOXI	MISSISSIPPI	14	98	142,041
DECA	KIRTLAND AIR FORCE BASE	ALBUQUERQUE	NEW MEXICO	15	108	140,648
DECA	KUNSAN AIR BASE	KUNSAN	KOREA, REPUBLIC OF	4	16	253,125
DECA	LAJES FIELD	FPO	PORTUGAL	5	58	94,138
DECA	LANGLEY AIR FORCE BASE	LANGLEY AFB	VIRGINIA	12	103	115,243
DECA	LANGLEY AIR FORCE BASE	LANGLEY AFB	VIRGINIA	17	103	161,553
DECA	LAUGHLIN AIR FORCE BASE	DEL RIO	TEXAS	5	75	67,733
DECA	LITTLE ROCK AIR FORCE BASE	LITTLE ROCK	ARKANSAS	10	100	95,300
DECA	LOS ANGELES AIR FORCE BASE	EL SEGUNDO	CALIFORNIA	10	75	127,600
DECA	LUKE AIR FORCE BASE	GLENDALE	ARIZONA	11	102	104,118
DECA	MACDILL AIR FORCE BASE	TAMPA	FLORIDA	15	171	89,591
DECA	MALMSTROM AIR FORCE BASE	MALMSTROM AFB	MONTANA	9	68	134,706
DECA	MARCH AIR RESERVE BASE	RIVERSIDE	CALIFORNIA	11	117	94,274
DECA	MARINE CORPS BASE QUANTICO VA	QUANTICO	VIRGINIA	15	121	125,868
DECA	MAXWELL AIR FORCE BASE	MONTGOMERY	ALABAMA	11	87	130,230
DECA	MAXWELL AIR FORCE BASE	MONTGOMERY	ALABAMA	6	42	137,619
DECA	MCAGCC TWENTYNINE PALMS CA	TOPAZ	CALIFORNIA	7	57	120,000

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
DECA	MCAGCC TWENTYNINE PALMS CA	TOPAZ	CALIFORNIA	2	13	149,231
DECA	MCAS CHERRY POINT NC	CHERRY POINT	NORTH CAROLINA	8	59	135,932
DECA	MCAS IWAKUNI JA	IWAKUNI	JAPAN	5	32	151,250
DECA	MCAS MIRAMAR	SAN DIEGO	CALIFORNIA	13	91	147,033
DECA	MCAS YUMA AZ	YUMA	ARIZONA	5	34	147,647
DECA	MCB CAMP LEJEUNE NC	CAMP LEJEUNE	NORTH CAROLINA	10	76	131,184
DECA	MCB CAMP LEJEUNE NC	CAMP LEJEUNE	NORTH CAROLINA	7	46	148,261
DECA	MCB CAMP PENDLETON CA	CAMP PENDLETON	CALIFORNIA	3	20	130,500
DECA	MCB CAMP PENDLETON CA	CAMP PENDLETON	CALIFORNIA	15	113	134,425
DECA	MCB CAMP S D BUTLER OKINAWA JA	ZUKERAN	JAPAN	12	291	41,031
DECA	MCB CAMP S D BUTLER OKINAWA JA	ZUKERAN	JAPAN	10	59	166,949
DECA	MCB CAMP S D BUTLER OKINAWA JA	ZUKERAN	JAPAN	5	31	175,806
DECA	MCB CAMP S D BUTLER OKINAWA JA	ZUKERAN	JAPAN	6	31	200,968
DECA	MCB HAWAII KANEOHE	KANEOHE	HAWAII	13	77	170,390
DECA	MCCONNELL AIR FORCE BASE	WICHITA	KANSAS	8	56	142,143
DECA	MCGUIRE AIR FORCE BASE	MCGUIRE AFB	NEW JERSEY	2	18	93,333
DECA	MCGUIRE AIR FORCE BASE	MCGUIRE AFB	NEW JERSEY	17	103	160,485
DECA	MCLB ALBANY GA	ALBANY	GEORGIA	5	37	139,730
DECA	MCLB BARSTOW CA	BARSTOW	CALIFORNIA	3	22	131,364
DECA	MCRD BEAUFORT PI SC	PARRIS ISLAND	SOUTH CAROLINA	5	44	117,727
DECA	MCSPTACT KANSAS CITY MO	BELTON	MISSOURI	3	24	131,667
DECA	MINOT AIR FORCE BASE	MINOT AFB	NORTH DAKOTA	8	56	149,107

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DECA	MISAWA AIR BASE	MISAWA AFB	JAPAN	10	82	125,000
DECA	MOODY AIR FORCE BASE	MOODY AF BASE	GEORGIA	9	64	132,969
DECA	MOUNTAIN HOME AIR FORCE BASE	ELMORE	IDAHO	6	54	115,741
DECA	NAF ATSUGI JA	ATSUGI	JAPAN	6	32	171,875
DECA	NAF EL CENTRO CA	EL CENTRO	CALIFORNIA	2	13	180,769
DECA	NAS CORPUS CHRISTI TX	CORPUS CHRISTI	TEXAS	9	46	187,391
DECA	NAS FALLON NV	FALLON	NEVADA	3	40	81,250
DECA	NAS JACKSONVILLE FL	JACKSONVILLE	FLORIDA	16	88	177,955
DECA	NAS JRB FT WORTH TX	FORT WORTH	TEXAS	16	93	170,968
DECA	NAS JRB NEW ORLEANS LA	BELLE CHASSE	LOUISIANA	8	47	177,660
DECA	NAS KEY WEST FL	STOCK ISLAND	FLORIDA	3	21	154,286
DECA	NAS KINGSVILLE TX	KINGSVILLE	TEXAS	2	15	149,333
DECA	NAS LEMOORE CA	LEMOORE NAS	CALIFORNIA	6	44	145,000
DECA	NAS MERIDIAN MS	MERIDIAN	MISSISSIPPI	6	32	173,125
DECA	NAS OCEANA VA	VIRGINIA BEACH	VIRGINIA	16	110	145,091
DECA	NAS PENSACOLA FL	PENSACOLA	FLORIDA	11	74	155,000
DECA	NAS SIGONELLA IT	SIGONELLA SICILY	ITALY	9	68	135,588
DECA	NAS WHIDBEY ISLAND WA	OAK HARBOR	WASHINGTON	10	66	157,273
DECA	NAS WHITING FLD MILTON FL	MILTON	FLORIDA	4	22	188,182
DECA	NATIONAL TRAINING CENTER AND FORT IRWIN	FORT IRWIN	CALIFORNIA	7	57	125,439
DECA	NAVAL AIR STATION PAX RIVER	PATUXENT RIVER	MARYLAND	8	56	143,214
DECA	NAVAL BASE KITSAP BREMERTON WA	BREMERTON	WASHINGTON	9	61	145,902
DECA	NAVAL BASE KITSAP BREMERTON WA	BREMERTON	WASHINGTON	7	48	150,208

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
DECA	NAVAL STATION GREAT LAKES IL	GREAT LAKES	ILLINOIS	10	60	162,000
DECA	NAVAL STATION NEWPORT RI	NEWPORT	RHODE ISLAND	9	46	195,870
DECA	NAVAL SUPPORT ACTIVITY CRANE	CRANE	INDIANA	1	8	142,500
DECA	NAVBASE CORONADO	SAN DIEGO	CALIFORNIA	11	78	136,410
DECA	NAVBASE CORONADO	SAN DIEGO	CALIFORNIA	8	46	181,087
DECA	NAVBASE GUAM	AGANA	GUAM	18	187	94,118
DECA	NAVBASE GUAM	AGANA	GUAM	12	57	210,000
DECA	NAVBASE SAN DIEGO CA	SAN DIEGO	CALIFORNIA	15	128	118,438
DECA	NAVBASE VENTURA CTY PT MUGU CA	POINT MUGU	CALIFORNIA	8	65	129,692
DECA	NAVSTA EVERETT WA	EVERETT	WASHINGTON	11	60	185,833
DECA	NAVSTA MAYPORT FL	JACKSONVILLE	FLORIDA	9	71	122,817
DECA	NAVSTA NORFOLK VA	NORFOLK	VIRGINIA	12	79	149,873
DECA	NAVSTA ROTA SP	ROTA	SPAIN	8	50	150,600
DECA	NAVSUBASE NEW LONDON CT	GROTON	CONNECTICUT	9	57	157,895
DECA	NAVSUBASE NEW LONDON CT	GROTON	CONNECTICUT	5	28	168,214
DECA	NAVSUPPACT ANNAPOLIS	ANNAPOLIS	MARYLAND	8	48	172,292
DECA	NAVSUPPACT MIDSOUTH MEMPHIS TN	MILLINGTON	TENNESSEE	11	61	178,197
DECA	NAVSUPPACT NAPLES IT	NAPLES	ITALY	13	85	150,941
DECA	NAVSUPPACT NORFOLK NSY	PORTSMOUTH	VIRGINIA	11	62	179,839
DECA	NAWS CHINA LAKE	CHINA LAKE	CALIFORNIA	3	24	120,417
DECA	NELLIS AIR FORCE BASE	LAS VEGAS	NEVADA	15	130	114,385
DECA	NSA ANDERSEN	ANDERSEN AB	GUAM	11	122	86,393
DECA	NSA SARATOGA SPRINGS NY	SARATOGA SPGS	NEW YORK	4	22	169,091
DECA	NSA SOUTH POTOMAC	DAHLGREN	VIRGINIA	2	15	157,333

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DECA	NSY PORTSMOUTH	KITTERY	MAINE	5	28	190,714
DECA	OFFUTT AIR FORCE BASE	OFFUTT A.F.B.	NEBRASKA	17	120	142,250
DECA	OSAN AIR BASE	OSAN AFB	KOREA, REPUBLIC OF	3	60	55,667
DECA	OSAN AIR BASE	OSAN AFB	KOREA, REPUBLIC OF	3	49	71,020
DECA	PATRICK AIR FORCE BASE	PATRICK AFB	FLORIDA	9	103	85,146
DECA	PETERSON AIR FORCE BASE	COLORADO SPRINGS	COLORADO	14	102	134,608
DECA	PICATINNY ARSENAL	DOVER	NEW JERSEY	5	22	210,455
DECA	PRESIDIO OF MONTEREY	MONTEREY	CALIFORNIA	9	111	80,541
DECA	RAF ALCONBURY	FPO	UNITED KINGDOM	11	77	141,688
DECA	RAF CROUGHTON	FPO	UNITED KINGDOM	3	20	152,500
DECA	RAF LAKENHEATH	LAKENHEATH	UNITED KINGDOM	19	112	166,250
DECA	RAF MENWITH HILL	FPO	UNITED KINGDOM	5	34	161,471
DECA	RAF MILDENHALL	MILDENHALL	UNITED KINGDOM	2	14	167,857
DECA	RAMSTEIN AIR BASE	RAMSTEIN	GERMANY	3	37	75,946
DECA	RAMSTEIN AIR BASE	RAMSTEIN	GERMANY	24	178	134,494
DECA	RAMSTEIN AIR BASE	RAMSTEIN	GERMANY	16	95	168,632
DECA	RAMSTEIN AIR BASE	RAMSTEIN	GERMANY	10	59	171,186
DECA	RAMSTEIN AIR BASE	RAMSTEIN	GERMANY	8	41	194,146
DECA	REDSTONE ARSENAL	HUNTSVILLE	ALABAMA	12	81	144,938
DECA	ROBINS AIR FORCE BASE	ROBINS AF BASE	GEORGIA	9	70	135,286
DECA	ROCK ISLAND ARSENAL	ROCK ISLAND	ILLINOIS	3	33	91,818
DECA	ROCK ISLAND ARSENAL	ROCK ISLAND	ILLINOIS	7	54	123,519
DECA	SCHOFIELD BARRACKS	WAHIAWA	HAWAII	14	92	155,652
DECA	SCOTT AIR FORCE BASE	BELLEVILLE	ILLINOIS	18	114	156,754

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DECA	SELFRIDGE ANG BASE	MOUNT CLEMENS	MICHIGAN	7	76	92,237
DECA	SEYMOUR JOHNSON AIR FORCE BASE	SEYMOUR JOHNSON AFB	NORTH CAROLINA	10	66	152,121
DECA	SHAW AIR FORCE BASE	SHAW AF BASE	SOUTH CAROLINA	10	61	166,557
DECA	SHEPPARD AIR FORCE BASE	WICHITA FALLS	TEXAS	11	81	134,198
DECA	SPANGDAHLEM AIR BASE	FPO	GERMANY	5	44	123,409
DECA	SUBASE KINGS BAY GA	KINGS BAY	GEORGIA	9	53	161,698
DECA	TINKER AIR FORCE BASE	OKLAHOMA CITY	OKLAHOMA	20	87	228,391
DECA	TOBYHANNA ARMY DEPOT	TOBYHANNA	PENNSYLVANIA	3	22	135,455
DECA	TRAVIS AIR FORCE BASE	FAIRFIELD	CALIFORNIA	16	97	159,794
DECA	TYNDALL AIR FORCE BASE	PANAMA CITY BEACH	FLORIDA	8	76	107,237
DECA	US ARMY GARRISON ANSBACH	ANSBACH	GERMANY	3	38	72,632
DECA	US ARMY GARRISON ANSBACH	ANSBACH	GERMANY	7	58	125,862
DECA	US ARMY GARRISON BAUMHOLDER	BAUMHOLDER	GERMANY	5	32	166,250
DECA	US ARMY GARRISON BENELUX	BRUSSELS	BELGIUM	8	46	175,652
DECA	US ARMY GARRISON GRAFENWOEHR	GRAFENWOHR	GERMANY	1	14	77,143
DECA	US ARMY GARRISON GRAFENWOEHR	GRAFENWOHR	GERMANY	7	52	129,231
DECA	US ARMY GARRISON GRAFENWOEHR	GRAFENWOHR	GERMANY	11	55	206,000
DECA	US ARMY GARRISON HEIDELBERG	HEIDELBERG	GERMANY	27	789	34,068
DECA	US ARMY GARRISON HOHENFELS	HOHENFELS	GERMANY	5	38	132,368
DECA	US ARMY GARRISON KAISERSLAUTERN	KAISERLAUTERN	GERMANY	5	52	94,808
DECA	US ARMY GARRISON LIVORNO	LIVORNO	ITALY	3	26	124,615

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
DECA	US ARMY GARRISON SCHINNEN	SCHINNEN	NETHERLANDS	5	24	206,667
DECA	US ARMY GARRISON STUTTGART	STUTTGART	GERMANY	3	41	71,220
DECA	US ARMY GARRISON STUTTGART	STUTTGART	GERMANY	5	64	85,469
DECA	US ARMY GARRISON STUTTGART	STUTTGART	GERMANY	3	18	175,000
DECA	US ARMY GARRISON STUTTGART	STUTTGART	GERMANY	2	5	396,000
DECA	US ARMY GARRISON VICENZA	VICENZA	ITALY	9	55	156,364
DECA	US ARMY GARRISON WIESBADEN	WIESBADEN	GERMANY	11	62	170,000
DECA	USAF ACADEMY	AIR FORCE ACADEMY	COLORADO	9	67	130,299
DECA	VANCE AIR FORCE BASE	ENID	OKLAHOMA	6	34	164,706
DECA	VANDENBERG AIR FORCE BASE	LOMPOC	CALIFORNIA	6	83	70,723
DECA	WEST POINT MILITARY RESERVATION	WEST POINT	NEW YORK	13	73	182,740
DECA	WHITE SANDS MISSILE RANGE	LAS CRUCES	NEW MEXICO	4	32	132,813
DECA	WHITEMAN AIR FORCE BASE	KNOB NOSTER	MISSOURI	8	61	135,902
DECA	WRIGHT PATTERSON AIR FORCE BASE	WRIGHT-PATTERSON AFB	OHIO	14	123	116,504
DECA	YOKOTA AIR BASE	YOKOTA AFB	JAPAN	21	81	260,000
DECA	YONGSAN GARRISON	SEOUL	KOREA, REPUBLIC OF	3	89	35,281
DECA	YONGSAN GARRISON	SEOUL	KOREA, REPUBLIC OF	13	94	137,021
DECA	YONGSAN GARRISON	SEOUL	KOREA, REPUBLIC OF	1	7	205,714
DECA	YUMA PROVING GROUND	YUMA	ARIZONA	3	23	124,783
DFAS	DFAS LIMESTONE	LIMESTONE	MAINE	9	141,000	61
DFAS	DFAS ROME	ROME	NEW YORK	26	332,000	78
DIA	DLOC WAREHOUSE	LANDOVER	MARYLAND	18	267	67,753

Component	Installation Name	City	State / Country	Total Site Delivered Energy (BBTU) Goal Subject	Gross Square Footage ('000 SF) Goal Subject	Intensity (BTU/SF) Goal Subject
DIA	JOINT BASE ANACOSTIA BOLLING	WASHINGTON	DISTRICT OF COLUMBIA	237	1,325	178,657
DIA	ROWE BLDG AND ULC 1/RIVANNA STATION	CHARLOTTESVILLE	VIRGINIA	33	184	181,957
DLA	DEFENSE DISTRIBUTION CENTER, SUSQUEHANNA	NEW CUMBERLAND	PENNSYLVANIA	347	7,633	45,493
DLA	DEFENSE DISTRIBUTION DEPOT SAN JOAQUIN	TRACY	CALIFORNIA	101	5,123	19,678
DLA	DEFENSE SUPPLY CENTER COLUMBUS	COLUMBUS	OHIO	294	3,865	76,088
DLA	DEFENSE SUPPLY CENTER RICHMOND	RICHMOND	VIRGINIA	253	4,579	55,246
NGA	NGA	SPRINGFIELD	VIRGINIA	673	6,653	101,082
NSA	FORT GEORGE G MEADE	FORT MEADE	MARYLAND	2,530	11,279	224,311
WHS	FORT BELVOIR	FORT BELVOIR	VIRGINIA	112	1,854	60,663
WHS	WASHINGTON HQS SERVICE	ARLINGTON	VIRGINIA	1,208	7,622	158,510

Appendix F - FY 2015 List of Energy Projects Funded by Appropriations and List of Non-Governmental Third-Party Funded Energy Projects

LIST OF ENERGY PROJECTS FUNDED BY APPROPRIATIONS

Project	Estimated Financial Obligation ($000s)
ARMY	**220,857**
Energy Conservation	**155,083**
402 GEIGER FIELD: REPLACE EXISTING BOILER	78
AASF: REPLACE OF MAIN ELECTRICAL PANELS	489
AASF BANGOR: 75 KW CHP COGENERATION SYSTEM	500
AASFRC: LED RETROFIT	365
AFRC: HVAC UPGRADE	44
AKRON: HVAC REPLACEMENT	80
ALBERT LEA ARMORY: HIGH EFFICIENCY LIGHTING	1,576
ANDERSON READINESS CENTER: DDC CONBTROLS UPDATE AND DATA CENTER EFFICIENCY RETROFIT	375
ANNISTON ARMY DEPOT: ENERGY MANAGEMENT CONTROL UPGRADE	4,105
ARARNG: PEC PTAC EMCS	622
ARARNG: PEC LED LIGHTING #1	177
ARARNG: PEC LED LIGHTING #2	107
ARARNG: PEC LED LIGHTING #3	110
ARARNG: CMTC 1370 ERU	182
ARARNG: CMTC 1584 HVAC	189
ASHLAND FMS: INTERIOR LIGHTING UPGRADE TO LED	17
AVCRAD: REPLACE HVAC	50
AVRC, BANGOR : HVAC/DHW REPLACEMENT	15,600
BARTONVILLE JAFRC: UPGRADE HVAC W/MINOR ELECTRICAL	2,604
BENTON ARMORY: INTERIOR AND EXTERIOR LIGHTING UPGRADE TO LED	40
BERLIN ARMORY: ADDITIONAL INSULATION INSTALLED DURING ROOFING REPLACEMENT	47
BILLINGS AFRC: REPLACE DX COOLING WITH CHILLED WATER SYSTEM	280
BLDG 2, CAMP JOHNSON: REPLACED STEAM BOILER AND PIPING WITH NG FIRED HOT WATER SYSTEM	33
BLDG 2, CAMP JOHNSON: WHOLE BUILDING RETROFIT TO LED INCLUDING EXTERIOR	7
BLDG 34, CAMP MURRAY : REPLACE EXISTING BOILER	354
BLDG 36, CAMP MURRAY: REPLACE EXISTING BOILER	65
BLDG 7, CAMP JOHNSON: WHOLE BUILDING RETROFIT TO LED INCLUDING EXTERIOR	128
BLDG 7, CAMP JOHNSON: REPLACED TWO ROOFTOP AC UNITS	28

Project	Estimated Financial Obligation ($000s)
BLDG 8, CEATS: WHOLE BUILDING RETROFIT TO LED INCLUDING EXTERIOR	28
BLUEFIELD ARMORY: REPLACE SINGLE PANE WINDOWS WITH INSULATED WINDOWS.	269
BNGC BC165: EXTERIOR LIGHTING UPGRADE TO LED	6
BNGC BC179: INTERIOR AND EXTERIOR LIGHTING UPGRADE TO LED	9
BNGC USP&FO MVSA: NET ZERO SECURITY FOR MVSA INSTALLING LED POLE LIGHTS AND GROUND MOUNTED SOLAR PV ARRAY	178
BOONE AASF/ARMORY/FMS 19A25-AASF1 AIRCRAFT MAINTENANCE HANGAR : CONSTRUCT CONDUIT AND INSTALL ELECTRICAL OUTLET FOR UAV POWER MODULE	18
BOONE AASF/ARMORY/FMS 19A25-ARMRY ARNG : REPLACE HEAT EXCHANGER AND BURNER ON WEST BOILER	45
BOONE AASF/ARMORY/FMS 19A25-ARMRY ARNG : ARMORY REPLACE FOTS ROOM AIR CONDITIONING	9
BOONE AASF/ARMORY/FMS 19A25-ARMRY ARNG ARMORY: INSTALL EGX100 AND CONNECT EXISTING METER TO NETWORK	3
BOWLING GREEN FMS: INTERIOR AND EXTERIOR LIGHTING UPGRADE TO LED	34
BROOKPARK: HVAC REPLACEMENT	130
BUILDING 10, CAMP JOHNSON: TOTAL RETROFIT FROM FLUORESCENT TO LED WITH CONTROLS	76
CAMP DAWSON: ENERGY IMPROVEMENTS - MULTIPLE BUILDINGS	22
CAMP DODGE 19901-B2000 BUILDING 2597 : RENOVATE BARRACKS	235
CAMP DODGE JMTC 19901-10170 : DIESEL/JP8 TO VEH DISP PUMP REPLACE FUEL DISPENSING SYSTEM AT W4600	10
CAMP DODGE JMTC 19901-A0100 : PROPOSED REPLACE CHECK VALVE ON CHILLER 3	15
CAMP DODGE JMTC 19901-A0100 BUILDING 3850: REPAIR FAN DRIVES ON COOLING TOWERS 4N AND 4S	4
CAMP DODGE JMTC 19901-A0100 BUILDING 3850: INSTALL ECC AND CONNECT EXISTING METER TO NETWORK	10
CAMP DODGE JMTC 19901-A0100 BUILDING 3850 : REPAIR EXTERIOR ENTRY DOORS	27
CAMP DODGE JMTC 19901-A0100 BUILDING 3850 : REMODEL SUITE 159 FOR JAG STAFF	19
CAMP DODGE JMTC 19901-A0100 BUILDING 3850 : REPAIR HUB ROOM VENTILATION BY INCREASING COOLING CAPACITY	10
CAMP DODGE JMTC 19901-A1700 BUILDING 3726 : REMODEL AND REPAIR DODGE HOUSE KITCHEN AND EXTERIOR	131
CAMP DODGE JMTC 19901-A26Q0 BUILDING 3753 : REPAIR HVAC	7
CAMP DODGE JMTC 19901-A26Q0 BUILDING 3753 : REMODEL EAST BEDROOM AND BATHROOM	22
CAMP DODGE JMTC 19901-B1400 BUILDING : REPLACE HVAC SYSTEM	8
CAMP DODGE JMTC 19901-B2100 BUILDING 2599 : RENOVATE BARRACKS	235
CAMP DODGE JMTC 19901-B2200 BUILDING 3555 : RENOVATE BARRACKS	235
CAMP DODGE JMTC 19901-BP123 BLDG 2589 : CONSTRUCT PAD BP123 AND REPLACE HVAC SYSTEM FOR BLDG B1600	8

Project	Estimated Financial Obligation ($000s)
CAMP DODGE JMTC 19901-BP124 BLDG 2591 : CONSTRUCT PAD BP124 AND REPLACE HVAC SYSTEM FOR BLDG B1700	8
CAMP DODGE JMTC 19901-DF100 BUILDING 2572 : ADDITION-RENOVATION	904
CAMP DODGE JMTC 19901-FS087 : FACILITY SIGN ELECTRONIC BY UNIT BARRACKS PURCHASE AND INSTALL LIGHTED DIGITAL INFORMATION SIGN NEAR S52	71
CAMP DODGE JMTC 19901-GAS00 : REPAIR GAS LEAK ALONG MAINTENANCE DRIVE	14
CAMP DODGE JMTC 19901-M0900 BUILDING 5513 : RENOVATE AND CONSTRUCT ADDITION	1,235
CAMP DODGE JMTC 19901-RGS16 RGS-16 MOD REC FIR RG : REPAIR PNEUMATIC TARGETRY AIR COMPRESSOR COMPONENTS	7
CAMP DODGE JMTC 19901-S0302 BUILDING 2323 : CONSTRUCT ELECTRICAL EXTENSION FOR RELOCATION OF ROWPU/TWPS	45
CAMP DODGE JMTC 19901-S0302 BUILDING 2323 : RENOVATE LIGHTING SYSTEM	9
CAMP DODGE JMTC 19901-S1400 BUILDING 3203 : REPLACE ROOFING	17
CAMP DODGE JMTC 19901-S210A BUILDING 2198 : REMODEL AND CONSTRUCT COVERED TRAINING AREA	360
CAMP DODGE JMTC 19901-S3400 BUILDING 2287 : ADDITION/RENOVATION	3,417
CAMP DODGE JMTC 19901-S34P0 BUILDING 2277 : CONSTRUCT GAS LINE AND INSTALL EXHAUST VENT FOR PARTS WASHER	5
CAMP DODGE JMTC 19901-S5100 BUILDING 1365 : RENOVATE ENERGY-RELATED BUILDING COMPONENTS	716
CAMP DODGE JMTC 19901-S7000 BUILDING 1285 : REPLACE LEAKING UNDERGROUND CHILLER LINE	245
CAMP DODGE JMTC 19901-S7100 BUILDING 1212: INSTALL ECC AND CONNECT EXISTING METER TO NETWORK	7
CAMP DODGE JMTC 19901-TF003 : REPLACE ELECTRICAL TRANSFORMER NORTH OF S70	48
CAMP DODGE JMTC 19901-TF110 : CONSTRUCT NEW PAD AND INSTALL NEW TRANSFORMER FOR M09	37
CAMP DODGE JMTC 19901-TK007 : CONSTRUCT ABOVE-GROUND FUEL STORAGE TANK SYS FOR A01 EMERG GENERATOR; DEMOLISH TWO UST'S	274
CAMP DODGE JMTC 19901-W37Q0 BUILDING 2469 : REMODEL KITCHEN	11
CAMP DODGE JMTC 19901-W38Q0 W-38Q : FAMILY HOUSING OTHER THAN MILITARY REMODEL KITCHEN	12
CAMP DODGE JMTC 19901-W39Q0 BUILDING 2477 : REMODEL KITCHEN	11
CAMP DODGE JMTC 19901-W4600 BUILDING 3447: CONSTRUCT CONDUIT FOR ELECTRICAL SERVICE AND WIRE NEW AIR COMPRESSOR	14
CAMP DODGE JMTC 19901-WP052 BUILDING W42 : CONSTRUCT PAD AND INSTALL REDUNDANT COOLING SYSTEM FOR DATA ROOM AT W42	47
CAMP GEORGE WEST (BLDG. 122 & 123): LIGHTING RETROFIT	25
CAMP JOHNSON : AUTOMATIC TRANSFER SWITCH FOR LOAD SHEDDING AND CURTAILABLE RATE	188
CAMP JOHNSON, BLDG 15: WHOLE BUILDING RETROFIT TO LED INCLUDING EXTERIOR	98
CAMP RILEA: BUILDING ENVELOPE (WINDOWS)	304

Project	Estimated Financial Obligation ($000s)
CAMP RILEA: BUILDING ENVELOPE (WINDOWS)	282
CAMP RIPLEY MTA: 27B40-02198 REHABILITATION INCLUDED INSULATION, LED LIGHTING, HIGH EFF. HEATING SYSTEMS, HVAC CONTROL SYSTEM	1,652
CAMP RIPLEY MTA: 27B40-11001 GSHP INSTALLATION	1,636
CAMP RIPLEY MTA: 27B40-07001 BLDG REHAB PROJECT	2,591
CAMP RIPLEY MTA: 27B40-15002 COMPUTER ROOM AC REPLACEMENT	339
CAMP RIPLEY MTA: 27B40-09001 FURNACE REPLACEMENT	4
CAMP RIPLEY MTA: 27B40-10001 FURNACE REPLACEMENT	5
CAMP RIPLEY MTA: AUDIT COMPONENT OF STATE OF MINNESOTA GUARUNTEED ENERGY SAVINGS PROGRAM	126
CAMP WITHYCOMBE: CENTRALIZE COMPRESSED AIR SYSTEM	404
CAMPBELLSVILLE ARMORY: EXTERIOR LIGHTING UPGRADE TO LED	17
CEDAR RAPIDS AFRC/FMS 19336-FMS01 : VEHICLE MAINTENANCE SHOP RELOCATE HEAT PUMP	5
CENTRAL CITY ARMORY: INTERIOR LIGHTING UPGRADE TO LED	15
CHILLICOTHE ARMORY: REPLACE LIGHTIUNG	15
COLUMBIA ARMORY: ADD DDC CONTROLS	27
COLUMBUS: BOILER REPLACEMENT	102
CRESTWOOD ARMORY: REPAIR HVAC SYSTEMS	2,204
CRESTWOOD ARMORY: UPGRADE ELECTRICAL AND LIGHTING SYSTEMS	2,079
DAVENPORT AASF/ARMORY 19B05-AASF3 : CONSTRUCT CONDUIT FOR UNDERGROUND ELECTRICAL POWER FOR SECURITY INDUCTION LOOPS FOR WEST GATE	4
DAVENPORT AASF/ARMORY 19B05-AASF3 : CONSTRUCT EXTERIOR SECURITY LIGHT	3
DESOTO ARMORY: REPLACED INT LIGHTS	10
DETROIT ARSENAL: POWER FACTOR CORRECTION ON ELECTRICAL DISTRIBUTION SYSTEM FOR GSPEL FACILITY	62
DETROIT ARSENAL: INSTALL VFD CONTROL FOR ENGINE COOLING &HX COOLING	44
DETROIT ARSENAL: CONNECT HIGH BAY LIGHT FIXTURES IN BLDG 203 TO EMS	35
DRFTA: REPAIR/REPLACE CONTROLS MULTIPLE FACILITIES	175
DRFTA: ADD SMART ELECTRIC STRIPS MULTIPLE FACILITIES	627
DRFTA: REPAIR/RPLACE HVAC MULTIPLE FACILITIES	480
DRFTA: REPAIR/REPLACE LIGHTS MULTIPLE FACILITIES	270
DRFTA: REPAIR/REPLACE DOMESTIC HOT WATER MULTIPLE FACILITES	1,031
DRFTA: REPAIR/REPLACE BUILDING ENVELOPE MULTIPLE FACILITIES	800
DRFTA: HVAC REPLACEMENT - MULTIPLE FACILITIES	6
DUBUQUE ARMORY 19B30-ARMRY ARNG : CONSTRUCT CONDUIT AND ELECTRICAL POWER TO AIR COMPRESSOR	1
DUNBAR ARMORY: REPLACE SINGLE PANE WINDOWS WITH INSULATED WINDOWS.	323
ELWOOD: BOILER REPLACEMENT	80

Project	Estimated Financial Obligation ($000s)
ENOSBURG ARMORY: ADDITIONAL INSULATION INSTALLED DURING ROOFING REPLACEMENT	41
ESTHERVILLE ARMORY 19B40-ARM02 : REPLACE WATER HEATER WITH TWO GAS-POWERED TANKLESS WATER HEATERS	18
FARMINGTON ARMORY: REPLACED INT LIGHTS	10
FESTUS ARMORY: REPLACED INT LIGHTS	16
FORT AP HILL: CONVERT FUEL OIL HEATING SYSTEMS TO HEAT PUMPS	287
FORT AP HILL: REPLACE FUEL OIL BOILER WITH HIGH EFFICIENT FURNACE	78
FORT AP HILL: CONVERT FUEL OIL BOILER TO PROPANE	47
FORT AP HILL: REPLACE STEAM WATER HEATER WITH PROPANE TANK-LESS	64
FORT BELVOIR: POST -WIDE DDC EMCS	2,400
FORT BELVOIR: REPAIR HVAC SYSTEM BLDG 220 OAA	2,995
FORT BENNING: SMART STRIPS FOR DESKTOP	174
FORT BENNING: RETROCOMMISSION FACILITIES, PHASE 4	418
FORT BENNING: RETROCOMMISSION FACILITIES, PHASE 6	493
FORT BENNING: RETROCOMMISSION FACILITIES, PHASE 5	500
FORT BENNING: RETROCOMMISSION FACILITIES, PHASE 8	481
FORT BENNING: PARKING LOT LIGHTING TO LED AT HARMONY CHURCH	357
FORT BRAGG: REPLACE 16 MOTORS W/VFDS 1BCT, C-AREA BUILDINGS	149
FORT BRAGG: UMCS INTEGRATION AND REPAIR HVAC UNITS IN 8-5050	117
FORT BRAGG: REPLACE D-3915 HVAC CONTROL AND OCCUPANCY SENSORS	80
FORT BRAGG: REPLACE FUEL OIL BOILER TO HEAT PUMP, N-7101	1,850
FORT BRAGG: REPLACE FUEL OIL BOILER TO HEAT PUMP, M-7858	128
FORT BRAGG: WATER SOURCE HEAT PUPS, COOLING TOWER, AND DDC FOR 2-1105	139
FORT BRAGG: RETROCOMMISSIONING POPE	1,500
FORT CAMPBELL: BOILERS, RAD HEAT, AX CONTROLS	900
FORT CARSON: B&B BARRACKS MECHANICLA ROOM REPLACEMENTS	4
FORT DODGE ARMORY/FMS 19B55-ARMRY : CONSTRUCT A 30-AMP CIRCUT WITH RECEPTACLE IN FOTS ROOM	2
FORT DODGE ARMORY/FMS 19B55-ARMRY ARNG : ARMORY REPLACE DDC SYSTEM CONTROLLERS	25
FORT DRUM: REPAIR / REPLACE HVAC SYSTEM P10732 (CLS VL)	292
FORT DRUM: RENOVATE, DEMO OFFICES & INSTALL A/C, T3897 (CLASSROOM)	400
FORT DRUM: REPAIR / REPLACE HVAC CONTROL SYSTEM P11115 (ODR)	29
FORT DRUM: REPAIR ATTIC SPACE (INSTALL INSULATION & VENTILATION) P219 (GEN INSTR BLDG)	641
FORT DRUM: REPAIR / REPLACE SMALL BUILDING CONTROLS (41 BUILDINGS)	98
FORT DRUM: REPLACE BOILER, P2312 (COMMUNICATION CENTER) URGENT	13
FORT DRUM: REPAIR BUILDING CONTROL SYSTEM P10122 (BARRACKS)	125
FORT DRUM: REPAIR LIGHTING AT 25 STREET INTERSECTIONS, CANTONMENT AREA	54

Project	Estimated Financial Obligation ($000s)
FORT DRUM: REPAIR / REPLACE AC UNIT, RM 143, P2065 (BASOPS)	649
FORT DRUM: REPR HVAC SYSTEM P10100 (DRM)	2
FORT DRUM: REPAIR / RENOVATE & INSTALL A/C, P10510 (BN HQ)	47
FORT DRUM: REPAIR HVAC IN COMMUNICATION ROOM, P10400 (BDE HQ)	139
FORT DRUM: REPR / REPL HOT WATER HEATERS 2EA, 20368 (BRKS)	48
FORT DRUM: REPAIR HVAC IN COMMUNICATION ROOM, P10200 (BDE HQ)	48
FORT DRUM: REPAIR HVAC IN COMMUNICATION ROOM, P10500 (DIVARTY HQ)	26
FORT GEORGE MEADE: WIRELESS CONTROLS	423
FORT GEORGE MEADE: SMART POWER STRIPS	212
FORT GEORGE MEADE: LED WALL PACKS	181
FORT HOOD: UMCS INTEGRATION	813
FORT HOOD: INSTALLATION OF VARIABLE SPEED DRIVE (VSD) RETROFIT KITS IN CEPS (B21022,B37015)	1,014
FORT HOOD: ADD BUILDINGS TO CENTRAL PLANT-LCNC	896
FORT HOOD: REPLACE MULTI-ZONE AHU, CONDENSING UNIT & CONTROLS	237
FORT HOOD: HVAC REPLACEMENT AND ADD DDC CONTROLS	356
FORT HOOD: CEP 10017 CHILLER REPLACEMENT W/VSD	1,085
FORT HOOD: CEP 33007 CHILLER REPLACEMENT W/VSD	526
FORT LEAVENWORTH: REPLACE QUARTZ SECURITY LIGHTING ON PRISON (USDB, JRCF) IDF PERIMETER FENCE WITH LED	198
FORT LEAVENWORTH: MORE EFFICIENT BURNERS FOR USDB BOILERS	100
FORT LEAVENWORTH: REPLACE INCANDESCENTS AND CFLS WITH LED BULBS. INSTALL PROGRAMMABLE THERMOSTATS	59
FORT RUCKER: HEAT RECOVERY CHILLER	352
FORT RUCKER: HEAT RECOVERY CHILLER	475
FT RILEY: REPAIR 1502 HIGH BAY INDOOR LIGHTING, QUTM	55
FT RILEY: BOILER FLUE DAMPER INSTALLATION, QUTM	93
FT RILEY: BLDG 722 LIGHTING/INSULATION, QUTM	186
FT RILEY: REPAIR ACP LIGHTING ESTES AND 12TH ST	118
FT. MEADE 159: REPLACE ALL PTAC UNITS	72
FT. MEADE 54: HVAC REPLACEMENT & DDC CONTROLS, CONVERT FROM STEAM TO NATURAL GAS HEAT	15
FT. MEADE 60: HVAC REPLACEMENT & DDC CONTROLS	37
FULTON ARMORY: REPLACE LIGHTING	8
FWATTS: INSTALL ESTERIOR LED FIXTURES	32
GALVA ARMORY: ELECTRICAL REHAB	1,020
GENERAL JONES ARMORY: REPLACE AND REPAIR HVAC SYSTEMS	2,233
GEORGETOWN: INSTALL LED LIGHTING AND ENERGY EFFICIENT UTILITIES	11
GOWEN FIELD: BLDG 307 LED LIGHTING	66

Project	Estimated Financial Obligation ($000s)
GOWEN FIELD: FMS#2 LED LIGHTING	16
GOWEN FIELD: ASP STADIUM LED LIGHTING	82
GQ012: REPLACE AHU/CHILLER	216
GQ012: REPLACE AHU/CHILLER	167
GREAT FALLS AFRC: CORRECT PROBLEMS AND IMPROVE EXISTING GROUND SOURCE HEAT PUMP SYSTEM.	452
HAROLD L. DISNEY TRAINING SITE: EXTERIOR LIGHTING UPGRADE TO LED	3
HI-ARNG: CHILLER REPLACEMENT AND HVAC RETROFIT	1,200
HI-ARNG: LED LIGHTING RETROFIT	49
HI-ARNG: DIRECT DIGITAL CONTROLS	58
HI-ARNG: HVAC SYSTEM REPLACEMENT	800
HI-ARNG: EXTERIOR LED LIGHTING RETROFIT	101
HI-ARNG: PARKING LOT FIXTURE LED RETROFIT	18
HI-ARNG: EXTERIOR LED LIGHTING RETROFIT	99
HOPKINSVILLE ARMORY: INTERIOR AND EXTERIOR LIGHTING UPGRADE TO LED	29
HVAC REPLACEMENT BLDG 32: REPLACE EXISTING BOILER	141
INDIANAPOLIS CSMS: AIR COMPRESSOR REPLACEMENT	43
IOWA CITY ARMORY 19C00-ARMRY ARNG ARMORY : UPGRADE ELECTRICAL SYSTEM FOR EMERGENCY GENERATION TO ALL AREAS	35
JACKSON FMS: INTERIOR LIGHTING UPGRADE TO LED	13
JBM-HH: INSTALL LED LIGHTING IN BUILDING 39 FORT MCNAIR DC AND LIGHT OCCUPANCY SENSORS - VARIOUS BUILDINGS	210
JBM-HH: INSTALL / REPLACE OLD / AGING AND INEFFICIENT CHILLERS AT AFH NCO QUARTERS (MYER MCNAIR)	1,100
JEFFERSON BARRACKS: REPLACED LIGHTING	5
JEFFERSON CITY ARMORY: REPLACED LIGHTING	20
JOINT BASE LEWIS-MCCHORD: CONVERT 70+ BUILDINGS FROM CENTRAL PLANT HEATING SYSTEMS TO INDIVIDUAL NATURAL GAS BOILERS	15
KANKAKEE JAFRC: UPGRADE HVAC W/MINOR ELECTRICAL	2,187
KANSAS CITY ARMORY: REPLACED LIGHTING	20
KEYSER ARMORY: REPLACE SINGLE PANE WINDOWS WITH INSULATED WINDOWS.	257
KNOXVILLE ARMORY 19C35-ARMRY ARNG : REPLACE LATRINE WATER HEATER	12
LAARNG: STATEWIDE (18 FACILITIES) EMCS INSTALLATION	186
LE MARS ARMORY 19C40-ARMRY ARNG ARMORY : REPLACE RTU FOR ORDERLY AND WEIGHT ROOMS	6
LEXINGTON ARMORY: INTERIOR AND EXTERIOR LIGHTING UPGRADE TO LED	19
LEXINGTON FMS: INTERIOR AND EXTERIOR LIGHTING UPGRADE TO LED	17
LITCHFIELD ARMORY: 27B35-09001 LITCHFIELD BLDG REHAB	1,164
LONDON FMS: INTERIOR AND EXTERIOR LIGHTING UPGRADE TO LED	20
MADISON: BOILER REPLACEMENT	107

Project	Estimated Financial Obligation ($000s)
MARION READINESS CENTER: REPLACEMENT OF HVAC AND LIGHTING	1,603
MARSHALL ARMORY: REPLACE LIGHTING	4
MARSHALLTOWN ARMORY 19C50-ARMRY : REPLACE TWO WATER HEATERS	18
MONTICELLO ARMORY: 53KW GROUND MOUNT SOLAR PV ARRAY	171
MONTROSE: REPLACED FAULTY PNEUMATIC CONTROLS WITH DDC.	8
MTN WRFR SCHL CEATS: WHOLE BUILDING RETROFIT TO LED INCLUDING EXTERIOR	163
MTN WRFR SCHL CEATS: REPLACED DOMESTIC WATER HEATER	71
MUNCIE: BOILER REPLACEMENT	136
MUSCATINE AFRC 19536-AFRC0 ARMED FORCES RESERVE CENTER : INSTALL ECC AND CONNECT EXISTING METER TO NETWORK	4
NC: JFHQ RETRO-COMMISSIONING	24
NC: ENERGY MASTER PLAN	50
NEWARK: HVAC REPL	102
OELWEIN ARMORY 19C90-ARMRY ARNG : ARMORY REPLACE FAILING WATER HEATER	10
OSKALOOSA ARMORY 19C95-ARMRY ARNG : RENOVATE ARMORY AND CONVERT PORTION OF MVSB1	2,153
OWENSBORO READINESS CENTER: 216KW GROUND MOUNT SOLAR PV ARRAY	510
PARKERSBURG ARMORY: REPLACE SINGLE PANE WINDOWS WITH INSULATED WINDOWS.	182
PENDELTON AASF: 150KW	815
PERU: BOILER REPLACEMENT	175
PICATINNY ARSENAL: REPLACE LIGHT SWITCHES W/OCCUPANCY SENSORS & CONTROLS	349
PIGMAN RC: INSULATED ACCOUSTIC CEILING	68
POPLAR BLUFF ARMORY: REPLACED INT LIGHTS	37
PT. PLEASANT ARMORY: REPLACE SINGLE PANE WINDOWS WITH INSULATED WINDOWS.	159
RED OAK ARMORY 19D15-ARMRY ARNG : ARMORY REPLACE LINTELS ON FOUR FIRST FLOOR WINDOWS	10
RENSSELAER: BOILER REPLACEMENT	116
RICHMOND AFRC: EXTERIOR LIGHTING UPGRADE TO LED & 252KW GROUND MOUNT SOLAR PV ARRAY	658
RICHMOND ARMORY: EXTERIOR LIGHTING UPGRADE TO LED	20
ROCK ISLAND ARSENAL: REPLACE 5,452 FLUORESCENT TUBES WITH LED TUBES	95
ROCK ISLAND ARSENAL: REPLACE 814 FLUORESCENT FIXTURES WITH LED FIXTURES, BLDG 210	129
ROCK ISLAND ARSENAL: REPLACE 373 FLUORESCENT FIXTURES WITH LED FIXTURES, BLDG 211-3	14
ROCK ISLAND ARSENAL: REPLACE 40 HID LAMPS WITH LED FIXTURES, NORTH SIDE, BLDG 222	140
ROCK ISLAND ARSENAL: REPLACE 40 HID LAMPS WITH LED FIXTURES, SOUTH SIDE, BLDG 223	150
ROCK ISLAND ARSENAL: REPLACE HID LIGHTS WITH LED, BLDG 114	70

Project	Estimated Financial Obligation ($000s)
ROCK ISLAND ARSENAL: REPLACE FAILED STEAM TRAPS, BLDG 350	55
ROCK ISLAND ARSENAL: REPLACE FAILED CEILING INSULATION, BLDG 112	59
ROCK ISLAND ARSENAL: ADDED CEILING INSULATION & CLOSED CEILING/ROOF VENTS, BLDG 144	10
ROLLA ARMORY: REPLACE LIGHTING	14
ROSEBURG ARMORY: ARMORY ENERGY RETROFIT	1,940
RRTC, NORWICH: WHOLE BUILDING RETROFIT TO LED INCLUDING EXTERIOR	13
RRTC, NORWICH: VENTILATION RE-COMMISSIONING	324
RRTC, NORWICH: VFDS FOR HOT WATER PUMPS	29
RRTC, NORWICH: ADD SPRAY FOAM INSULATION TO EVES	36
RRTC, NORWICH: CO2 DEMAND CONTROL FOR VENTILATION	126
SALEM AASF HANGAR 1: ENERGY RETROFIT, BUILDING ENVELOPE	45
SALEM AASF, HGR 2: BOILER REPLACEMENT	89
SALEM AASF, HGR 2: DDC	109
SALEM FMS: LIGHTING	108
SALEM JFHQ: LIGHTING UPGRADE	411
SALEMN: BOILER REPLACEMENT	103
SCANNELL: REPLACE LIGHTING TO LED	584
SEATTLE READINESS CENTER: REPLACE EXISTING BOILER	112
SHELDON ARMORY 19D35-ARMRY : REPLACE EXTERIOR DOOR AND FRAME	6
SIERRA ARMY DEPOT: LIGHTING CONTROL AND LED RETROFIT	1,030
SIERRA ARMY DEPOT: LIGHTING CONTROL AND LED RETROFIT	1,030
SOUTH DAKOTA STATEWIDE: VARIOUS WORK ORDERS INCORPORATING LIGHTING, HVAC REPLACEMENT	162
STATE WIDE LIGHTING FACILITIES: STATEWIDE LIGHTING RETROFIT	2,800
SULLIVAN READINESS CENTER: UPGRADE HVAC	883
TEXAS ARMY NATIONAL GUARD: BUILDING AUTOMATED CONTROLS & EMS/UMCS	384
TEXAS ARMY NATIONAL GUARD: CAMP MABRY STREET LIGHT LED UPGRADES	65
TEXAS ARMY NATIONAL GUARD: MULTIPLE CENTRAL TEXAS FACILITY INTERIOR AND EXTERIOR LED LIGHTING UPGRADES	62
TEXAS ARMY NATIONAL GUARD: CAMP BULLIS RC IMPROVEMENTS	180
TOMPKINSVILLE ARMORY: EXTERIOR LIGHTING UPGRADE TO LED	5
TYNDALL: BOILER REPLACEMENT	110
UMATILLA TRAINING CENTER: BIOMASSS CENTRAL HEATING PLANT	6,600
USAG ANSBACH: REPLACE WINDOWS IN HANGAR # 5508	128
USAG ANSBACH: REPLACE EXT LIGHTS BY LEDS	45
USAG ANSBACH: REPLACE EXT LIGHTS BY LEDS	58
USAG BAVARIA: UPGRADE ELECTRICAL SYSTEM AND REPLACE INEFFICIENT LIGHTING SYSTEM.	1,100

Project	Estimated Financial Obligation ($000s)
USAG BAVARIA: REPLACE OVERAGED BAS CONTROL IN BLDG 6	90
USAG BAVARIA: REPAIR ROOF DAMAGES BLDG. 332	30
USAG BAVARIA: INSTALL AIR EXCHANGE SYSTEM BLDG. 41	86
USAG BAVARIA: REPLACE FAILING BAS CONTROLLERS IN BLDGS 332, 334, 344 AND 346	300
USAG BAVARIA: RENOVATE BLDG. 1	15
USAG BAVARIA: MODERNIZE UEMCS REMOTE SUBSTATIONS MULTIPLE CAMPS	90
USAG BAVARIA: REPLACE FAILING HIGH VOLTAGE CABLES, PHASE VII, REV I	1,000
USAG BAVARIA: REPLACE ROOF CONSTRUCTION BLDG 710	1,000
USAG BAVARIA: REPAIR HEATING/SAFETY/UEMCS ALBERTSHOF TROOP BILLETS 1139-1143	69
USAG BAVARIA: MODERNIZE EXISTING HVAC AND CONNECT TO EMCS	23
USAG BAVARIA: WINDOW SENSOR CONTROLS FOR RADIATORS	450
USAG BAVARIA: INSTALL OCCUPANCY SENSORS FOR INTERIOR SPACES	2,800
USAG BAVARIA: REPLACE NON-PROGRAMMABLE RADIATOR THERMOSTATS WITH PROGRAMMABLE MODELS	244
USAG BAVARIA: ADDITIONAL BLDG.. INSULATION AND WEATHERSTRIPPING	170
USAG BAVARIA: REPLACE INCANDESCENT LIGHTS WITH LED	127
USAG BAVARIA: LIGHTING CONTROLS	8
USAG BAVARIA: ELECTRICAL/MECHANICAL ENERGY CONSERVATION MEASURES	27
USAG BAVARIA: HEATING CONTROLS	94
USAG BAVARIA: INSTALL OVERHEAD INFRARED HEATING	89
USAG BAVARIA: INCREASE BUILDING INSULTATION	229
USAG BAVARIA: T-8 FLUORESCENT LIGHTING UPGRADE	435
USAG BAVARIA: UPGRADE WALL AND DISPLAY CABINET LIGHTING	113
USAG BAVARIA: INSTALL PLASTIC STRIP CURTAINS OVER WAREHOUSE DOOR OPENINGS	59
USAG BENELUX: IMPROVE HVAC SYSTEMS AND CONNECT THEM TO EMCS AT CHIEVRES AIR BASE	200
USAG DAEGU: REPAIR DETERIORATED INTERIOR FLUORESCENT WITH LED	71
USAG DAEGU: REPAIR DETERIORATED WEATHER STRIPPING FOR DOORS	507
USAG DAEGU: REPAIR DAMAGED EXISTITNG SHOWER HEAD REDUCERS	193
USAG DAEGU: REPLACE HEATING AND AC EQUIPMENT (20+)	1,595
USAG DAEGU: REPLACE AC SYSTEM (20+)	1,800
USAG FT GREELY: REPLACE ROOF B601	1,191
USAG FT GREELY: REPAIR B605 ENVELOPE	929
USAG JAPAN: REPLACE A/C FOR SERVER ROOM (EXCHANGE, B425, CAMP ZAMA)	91
USAG JAPAN: REPAIR BY REPLACE HVAC SYSTEM FOR UPH (B781, CZ)	469

Project	Estimated Financial Obligation ($000s)
USAG JAPAN: REPLACE HVAC SYSTEM (UPH, B782) CAMP ZAMA	442
USAG JAPAN: REPLACE OUTSIDE CHILLER UNIT (B216)	295
USAG JAPAN: REPLACE A/C SYSTEM (B109)	163
USAG JAPAN: REPLACE A/C SYSTEM AT TELECOMM SWITCH ROOM (B210)	35
USAG JAPAN: REPLACE OUTSIDE CHILLER UNIT (B218)	237
USAG JAPAN: REPLACE A/C SYSTEM (B102)	73
USAG RED CLOUD: REPAIR / REPLACE EXISTING DETERIORATED LIGHTING FIXTURE WITH LED , EAST CASEY, CP CASEY	223
USAG RED CLOUD: REPLACE STREET LIGHT WITH LED LIGHTS, SWISS / SWEDE	225
USAG RED CLOUD: INSTALL NATURAL DAY LIGHTING SYSTEM FOR MOTOR POOL EAST SIDE, CP CASEY	288
USAG RED CLOUD: INSTALL NATURAL DAY LIGHTING SYSTEM FOR MOTOR POOL WEST SIDE, CP CASEY	571
USAG RED CLOUD: INSTALL NATURAL DAY LIGHTING SYSTEM FOR WARE HOUSE AT CP CASEY	45
USAG RED CLOUD: REPLACE OIL FIRED BOILER SYSTEM WITH NATURAL GAS BOILER SYSTEM FOR BUILDINGS IN 1/72D ARMOR UNIT AREA (PH #11)	649
USAG RED CLOUD: REPLACE OIL FIRED BOILER SYSTEM WITH NATURAL GAS BOILER SYSTEM FOR BUILDINGS IN 210TH FIRS BDE UNIT AREA (PH #13)	576
USAG RHEINLAND-PFALZ : REPLACE SWITCHING CABINET & CONNECT FIBER OPTIC CABLES FOR EMCS	283
USAG RHEINLAND-PFALZ : REPLACE INSULATION OF HVAC SYSTEMS	20
USAG RHEINLAND-PFALZ : UPGRADE EMCS COMPONENTS	450
USAG RHEINLAND-PFALZ : UPGRADE THERMAL INSULATION AND PAINT EXTERIOR OF BUILDING 8079	105
USAG RHEINLAND-PFALZ : UPGRADE ROOF AND WALL THERMAL INSULATION AND PAINT EXTERIOR OF BLDG 8062	52
USAG RHEINLAND-PFALZ : UPGRADE ROOF AND WALL THERMAL INSULATION AND PAINT EXTERIOR OF BLDG 8061	220
USAG RHEINLAND-PFALZ : UPGRADE ROOF AND WALL THERMAL INSULATION AND PAINT EXTERIOR OF BLDG 8060	220
USAG RHEINLAND-PFALZ : UPGRADE ROOF AND WALL THERMAL INSULATION AND PAINT EXTERIOR OF BLDG 8059	274
USAG RHEINLAND-PFALZ : UPGRADE ROOF AND WALL THERMAL INSULATION AND PAINT EXTERIOR OF BLDG 8056	280
USAG RHEINLAND-PFALZ : UPGRADE ROOF AND WALL THERMAL INSULATION AND PAINT EXTERIOR OF BLDG 8053	280
USAG RHEINLAND-PFALZ : UPGRADE ROOF AND WALL THERMAL INSULATION AND PAINT EXTERIOR OF BLDG 8038	284

Project	Estimated Financial Obligation ($000s)
USAG RHEINLAND-PFALZ : UPGRADE ROOF AND WALL THERMAL INSULATION AND PAINT EXTERIOR OF BLDG 8035	220
USAG RHEINLAND-PFALZ : UPGRADE ROOF AND WALL THERMAL INSULATION AND PAINT EXTERIOR OF BLDG 8013	220
USAG RHEINLAND-PFALZ : UPGRADE ROOF AND WALL THERMAL INSULATION AND PAINT EXTERIOR OF BLDG 8006	220
USAG RHEINLAND-PFALZ : UPGARDE ROOF & REP WALL THERMAL INSULATION AND PAINT EXTERIOR OF BLDG 8074	220
USAG RHEINLAND-PFALZ : UPGRADE ROOF AND WALL THERMAL INSULATION AND PAINT EXTERIOR OF BLDG 8066	284
USAG RHEINLAND-PFALZ : REPLACE HEATING LINE FR 8085 TO 8092	146
USAG RHEINLAND-PFALZ : UPGRADE MAIN WATER SUPPLY LINE BETWEEN 8018 AND 8033	116
USAG RHEINLAND-PFALZ : UPGRADE THERMAL INSULATION AND PAINT EXTERIOR OF BUILDING 8070	100
USAG RHEINLAND-PFALZ : UPGRADE THERMAL INSULATION AND PAINT EXTERIOR OF BUILDING 8071	116
USAG RHEINLAND-PFALZ : REPLACEMENT OF LIGHTS & INSTALLATION OF LIGHTING AND POWER CONTROLS	40
USAG RHEINLAND-PFALZ : INSTALL SENORS FOR INTERIOR LIGHTING	400
USAG RHEINLAND-PFALZ : REPLACE LUMINAIRES INTERIOR / EXTERIOR	80
USAG RHEINLAND-PFALZ : INSTALLATION OF ENERGY EFFICIENT LIGTHS AND LIGHT CONTROL	16
USAG RHEINLAND-PFALZ : INSTALL LIGHTS & LIGHT CONTROLS IN BLDG. 3116	450
USAG RHEINLAND-PFALZ : INSTALL SENSORS FOR INTERIOR LIGHTING	33
USAG RHEINLAND-PFALZ : UPGRADE AND INSULATE ROOF COVERING OF BLDG # 1375	350
USAG RHEINLAND-PFALZ : UPGRADE AND INSULATE ROOF COVERING #1349	15
USAG RHEINLAND-PFALZ : UPGRADE AND INSULATE ROOF SHEETS, ROOF COVERING #4A	350
USAG RHEINLAND-PFALZ : ENERGY EFFICENT UPGRADE	112
USAG RHEINLAND-PFALZ : UPGRADE ROOFS, 3557 AND 3570	30
USAG STUTTGART: REPAIR PARKING LIGHTS	94
USAG STUTTGART: REPAIR PARKING LIGHTS	101
USAG STUTTGART: REPLACE STREET LIGHTS	145
USAG VICENZA: E8-41088-3J - REPLACE ASP#7 PERIMETER LIGHTING FIXTURES	147

Project	Estimated Financial Obligation ($000s)
USAG VICENZA: E8-41250-9J - REMOVE REPLACE OBSOLETE LIGHT POLES - EDERLE	599
VARIOUS: CEWE SUPPORT	5,000
VARIOUS: BUILDING AUTOMATION REQUIREMENTS	2,000
WALTON ARMORY: 19.8 KW ROOF MOUNT SOLAR PV ARRAY	61
WATERLOO AASF/ARMORY 19D65-AASF2 AC MAINT HGR : TUCKPOINT AND REPLACE CRACKED EXTERIOR BRICKS, CAULK WINDOW LINTELS	15
WATERLOO AASF/ARMORY 19D65-AASF2 AC MAINT HGR : MODIFY ELECTRICAL PANEL TO CONNECT FUEL POINT TO BACKUP GENERATION	2
WATERLOO AASF/ARMORY 19D65-AASF2 AC MAINT HGR : CONSTRUCT CONDUIT AND INSTALL 30 AMP CIRCUIT WITH RECEPTACLE	5
WATERLOO ARMORY/FMS 19D70-ARMRY: REPLACE COOLING UNIT IN FOTS ROOM	3
WATERLOO ARMORY/FMS 19D70-ARMRY ARNG ARMORY : REPLACE EXTERIOR WALL PACKS AND PARKING LIGHT FIXTURES FOR ENERGY EFFICIENCY	42
WATERVLIET ARSENAL: REPLACE MAIN ELECTRICAL SUBSTATION, POST	4,276
WATERVLIET ARSENAL: REPLACE ELECTRIC CABLE, SUB 3A4 TO 3B4	106
WATERVLIET ARSENAL: REPLACE ELECTRIC DISTRIBUTION CABLES	374
WATERVLIET ARSENAL: REPLACE SUMMER STEAM BOILER	983
WELCH ARMORY: REPLACE SINGLE PANE WINDOWS WITH INSULATED WINDOWS.	270
WENATCHEE RC: INSTALL EIFS	125
WHITEMAN AFB ARMORY: REPLACE LIGHTING	20
WILLIAMSTOWN AFRC: INSTALL EXTERIOR LED FIXTURES	22
Renewable Energy	**56,291**
AFRC BRUNSWICK: GEO THERMAL, SOLAR PV, SOLAR DOMESTIC HOT WATER, RAIN WATER COLLECTION, AND GREEN ROOF INSTALLATION	24,683
BUCKEYE TS B2103: ROOFTOP PV SOLAR	77
BUCKEYE TS B2105: ROOFTOP PV SOLAR	175
CAMP ATTERBURY: HYBRID SOLAR PV AND WIND	48
CAMP ATTERBURY: HYBRID SOLAR PV, SOLAR THERMAL AND WIND	117
CAMP ATTERBURY: HYBRID SOLAR PV AND SOLAR THERMAL	85
CGJMTC: COMPRESSED NATURAL GAS VIRTUAL CAPTURE PIPELINE INSTALLATION	891
CHP 4, CEATS: 40 KW ROOFTOP ARRAY	132
FLORENCE TS L5030: ROOFTOP ARRAY	17
FORT GEORGE MEADE: SOLAR THERMAL ROOF AT GAFFNEY POOL	303
FORT GEORGE MEADE: SOLAR THERMAL ROOF AT 6400 BARRACK	304
FORT HUNTER LIGGETT: 5MW PVS WITH 3MW HR BATTERY STORAGE	22,000
FREEPORT ARMORY: HVAC REHAB	1,740
HI-ARNG: SOLAR RENEWABLE ENERGY	300
JOINT READINESS CENTER, CEATS: 114 KW ROOFTOP	410
PPMR-FMO: SOLAR COVERED PKING	302
RRTC, NORWICH: WOOD PELLET BOILER SYSTEM	456

Project	Estimated Financial Obligation ($000s)
USAG BAVARIA: INSTALL SOLAR HEATING SYSTEM AT BLDG. 88 - USAG HOHENFELS	90
USAG BAVARIA: INSTALL ROOFTOP PV AND REMOVE ASBESTOS FROM CEILINGS IN BUILDINGS 1250, 1170, AND 1171.	200
USAG DAEGU: SOLAR TUBE LIGHTING	2,032
USAG STUTTGART: INSTALL SOLAR PANELS	259
USAG STUTTGART: INSTALL SOLAR PANELS	259
USAG STUTTGART: INSTALL SOLAR PANELS	259
USAG STUTTGART: INSTALL SOLAR PANELS	259
USAG STUTTGART: INSTALL SOLAR PANELS	259
USAG VICENZA: INSTALL PV SYSTEM ON VARIOUS BUILDING AT CAMP EDERLE	634
Water Conservation	**9,483**
AFRC: WATER TREATMENT INSTALL	30
ANNISTON ARMY DEPOT: WATER DISTRIBUTION REPAIR	1,200
ANNISTON ARMY DEPOT: WATER STORAGE TANK	542
CAMP RIPLEY MTA: WATER DISTRIBUTION STUDY RESEARCHING SYSTEM CONDITION AND LEAK DISCOVERY SYSTEMS	196
DRFTA: REPAIR/REPLACE WATER FIXTURES MULTIPLE FACILITIES	279
FAIRFIELD FMS 19B50-OMS12 ARNG VEH MAINT : UPGRADE DRINKING WATER QUALITY BY INSTALLING FILTER TO FAUCET IN BREAKROOM	1
FORT BRAGG: REPLACE SHOWER HEADS IN PFCS AND BARRACKS	55
GOWEN FIELD: BLDG 911 PARKING AREA XERISCAPE	40
NC: WATER MASTER PLAN	50
PIGMAN RC: ADA TOILET/SINKS/SHOWERS; SPRINKLERS; FIRE PUMP;	599
USAG BAVARIA: LOW-FLOW SHOWERHEADS	32
USAG BAVARIA: PLUMBING	71
USAG DAEGU: REPAIR DAMAGED EXISTING AERATORS REDUCERS	230
USAG JAPAN: REPAIR BY REPLACEMENT - POTABLE WATER PIPES (PHASE 1 OF 4)	414
USAG JAPAN: REPAIR BY REPLACEMENT - STEAM LINES (PHASE 3 OF 3)	913
USAG JAPAN: REPLACE HEATING AND DOMESTIC HOT WATER PIPIES)	198
USAG JAPAN: REPLACE WATER MAIN	194
WATERVLIET ARSENAL: REPLACE WATER DISTRIBUTION SYSTEM, POST	4,439
NAVY	**201,933**
Energy Conservation	**173,374**
CAMP LEMONNIER DJIBOUTI: ECIP - ENERGY EFFICIENT LIGHT FIXTURES	1,046
CAMP LEMONNIER DJIBOUTI: PERIMETER LIGHTING EFFICIENCY UPGRADE	473
CFA SASEBO JA: ECIP - MULTI-FACILITY DDC UPGRADE, CFAS	5,680
CFA SASEBO JA: SASEBO - C20562 ENERGY EFFICIENT LIGHTING FOR BLDG. 430 FLEET GYM -EM-	102

Project	Estimated Financial Obligation ($000s)
CFA SASEBO JA: ENERGY - REMOVE STEAM HEATED DHW SYSTEM/REPLACE W/POU ELECTRIC TANKLESS WATER HEATERS B155	352
CFA YOKOSUKA JA: REPLACE OVERSIZED 710KW AUR COMPRESSOR MOTOR WITH 290KW. BLDG 1938	838
JB PEARL HARBOR HICKAM HI: WR 838812 ENERGY - INSTALL HEAT PUMPS IN BUILDING 1770	285
JB PEARL HARBOR HICKAM HI: ENERGY HID LIGHTING RETROFIT PHNSY	1,869
JB PEARL HARBOR HICKAM HI: IDIQ RETROCOMMISSIONING SERVICES, OAHU, HI	2,389
JB PEARL HARBOR HICKAM HI: FLC EXTERIOR LIGHTING RETROFIT WITH UNICOR	120
JB PEARL HARBOR HICKAM HI: REPLACE PIPING/DUCT INSULATION AT BLDGS 2131H, 2133H, 2140H, 2141H	165
JEB LITTLE CREEK FORT STORY VA: ENERGY SAVING RCX AND DDC UPGRADE	2,000
JOINT BASE ANACOSTIA BOLLING: ENERGY, REPAIR LIGHTING FIXTURES	1,428
JOINT BASE ANACOSTIA BOLLING: EQUIPMENT UPGRADES BLDG 18	298
JOINT BASE ANACOSTIA BOLLING: ENERGY REPAIR LEAKS HTHW LINES	1,190
NAF ATSUGI JA: WASTEWATER OPTIMIZATION PROJECT	690
NAF EL CENTRO CA: ENERGY - BARRACKS WEATHERSTRIPPING AND SHIELDS	169
NAF MISAWA JA: RETROCOMMISSIONING VARIOUS BUILDING	362
NAS CORPUS CHRISTI TX: DDC CONTROLS FOR 16 BUILDINGS	1,777
NAS CORPUS CHRISTI TX: ENERGY - NASCC VARIOUS PARKING & WALKWAY LED LIGHT REPLACEMENT	231
NAS CORPUS CHRISTI TX: UPGRADE WATER PLANT FACILITIES BLDG W-1 (MAIN WATER DISTRIBUTION FACILITY PUMP-HOUSE)	985
NAS FALLON NV: FY15 RME - REPAIR MISC LIGHTING IMPROVEMENT	177
NAS JACKSONVILLE FL: B850 & B848A HVAC REWORK MODERNIZATION	321
NAS JACKSONVILLE FL: B848/B858/B962 HVAC REWORK MODERNIZATION	512
NAS JRB FORT WORTH TX: TINKER AFB TACAMO FACILITY ENERGY IMPROVEMENTS	1,730
NAS KINGSVILLE TX: REPLACE POOL COVER AND INSTALL SOLAR DHW SYSTEM	248
NAS MERIDIAN MS: ENERGY - CHILLER REPLACEMENT, BLDG 218	647
NAS OCEANA VA: ENERGY IMPROVEMENTS FOR MULTIPLE BLDGS NASO/DN RM12-3816	2,044
NAS OCEANA VA: REPLACE ROOF BLDG 127-TAYLOR HALL	1,560
NAS OCEANA VA: REPLACE ROOF BLDG 127-HOPPER HALL	610
NAS PENSACOLA FL: ENERGY - ECM FACILITY ENERGY IMPROVEMENT FOR BLDG 4143	394
NAS PENSACOLA FL: INSTALL RADIANT HEATERS IN BLDG 3221	416
NAS PENSACOLA FL: REPAIR CORRY BEQ 3701	8,335
NAS PENSACOLA FL: REPAIR CORRY BEQ 3709	4,973
NAS PENSACOLA FL: REPAIR CORRY BEQ 3710	4,974
NAS PENSACOLA FL: REPAIR B781 FRO NOSC	4,489
NAS PENSACOLA FL: HVAC CORRY GYM	889
NAS WHIDBEY ISLAND: ENERGY - REPAIR INDUSTRIAL CONTROL SYSTEM (ICS) RM12-3093	8,166

Project	Estimated Financial Obligation ($000s)
NAS WHIDBEY ISLAND: ENERGY - FLIGHTLINE_FENCE LINE_EXTERIOR BLDG LIGHTING	413
NAVAL BASE KITSAP: ENERGY - RETROCOMMISSIONING 3 FLOORS OF B/290 AND ALL OF B/997	310
NAVAL BASE KITSAP: NORTHWEST BUMED HVAC AND LIGHTING MODERNIZATION	103
NAVAL BASE KITSAP: (B2YR47) ENERGY - RETRO-COMMISSIONING AND PERISCOPE SHOP HVAC UPGRADE, B/7000 BANGOR	95
NAVAL BASE KITSAP: REROOF/ADD INSULATION, B-15S	118
NAVAL BASE KITSAP: CAULK/RESEAL WINDOW SOUTH SIDE B-82	800
NAVAL BASE KITSAP: UPGRADE A/C CHILLER B-894	515
NAVAL BASE KITSAP: REROOF/ADD INSULATION, B-206	925
NAVAL BASE KITSAP: KEYPORTREROOF B-206 AND ADD R-22 INSULATION	200
NAVAL BASE KITSAP: KEYPORT B-894 CHILLER UPGRADE	423
NAVAL BASE KITSAP: KEYPORT B-1003 CRAC REPLACEMENTS	321
NAVAL BASE KITSAP: KEYPORT B-5092 HVAC AND LIGHTING UPGRADES	350
NAVAL HOSPITAL/NAVAL SUPPORT FACILITY BEAUFORT: STEAM LINE REPLACEMENT	1,193
NAVAL HOSPITAL/NAVAL SUPPORT FACILITY BEAUFORT: LED STREET LIGHT REPLACEMENT	308
NAVAL STATION EVERETT: ENERGY - RECOMMISSIONING & MODERNIZATION	1,075
NAVAL STATION EVERETT: RM12-3880 ENERGY - HVAC, LIGHTING AND WATER MODERNIZATION	300
NAVAL STATION NORFOLK VA: ENERGY - LED LIGHTING FOR C9 AND N30 AUDITORIUMS	107
NAVAL STATION NORFOLK VA: LED LIGHTING FOR AIRFIELD	2,556
NAVAL STATION NORFOLK VA: ENERGY - MULTIPLE BUILDING HVAC IMPROVEMENTS	976
NAVAL STATION NORFOLK VA: W-143 REPLACE HVAC SYSTEM IN NMCI AREA.	9,502
NAVAL STATION NORFOLK VA: REPLACE UNDERGROUND STEAM LINE NS NORFOLK GATE 5	227
NAVAL STATION NORFOLK VA: REPLACE UNDERGROUND STEAM LINE DECATUR AVE & PIER 10	302
NAVAL SUBMARINE BASE NEW LONDON: PHASE 2 BUILDING OPTIMIZATION AND RETROCOMMISSIONING.	3,364
NAVBASE GUAM: ESRM ENERGY EFFICIENT ENTRANCE LIGHTING FOR MULTIPLE BUILDINGS, NBG RM 13-0654	300
NAVBASE GUAM: ESRM ENERGY - FACILITY IMPROVEMENTS FOR EFFICIENCY, BLDGS 2, 3169, 1981 & 200NZ NBG	1,686
NAVBASE GUAM: ESRM PROJECT EXTERIOR BUILDING LIGHTS, VARIOUS LOCATIONS, NBG RM14-2167	213
NAVBASE POINT LOMA: ENERGY UPGRADE HAVC AND BOILERS B544	2,907
NAVBASE POINT LOMA: ENERGY- UPGRADE LIGHTING & CHILLED WATER SYSTEM, BUILDING 58	367
NAVSTA GREAT LAKES IL: TINKER AFB TACAMO	1,617
NAVSTA GUANTANAMO BAY CU: FY15_RME - LIGHTING MODERNIZATION FOR 20 FACILITIES	659
NAVSTA GUANTANAMO BAY CU: FY15_RME-MINI SPLIT UPGRADES FOR 27 FACILITIES	1,140

Project	Estimated Financial Obligation ($000s)
NAVSTA MAYPORT FL: ENERGY - BLDG 1980 NAVY LODGE HVAC UPGRADES AND RCX	403
NAVSTA MAYPORT FL: ENERGY - BLDG 1556 HVAC UPGRADES AND RCX	354
NAVSTA MAYPORT FL: ENERGY - BUILDING 338 HVAC OPTIMIZATION AND RETRO-COMISSIONING	696
NAVSTA MAYPORT FL: ENERGY - FACILITIES ENERGY CONSERVATION MEASURE	987
NAVSTA NEWPORT RI: BOILER CONTROLS BLDG A6 NHCNE	65
NAVSTA NEWPORT RI: NEWPORT PLANT OPTIMIZATION & STEAM BACKPRESSURE TURBINE	2,860
NAVSTA NEWPORT RI: MODIFICATIONS BOILER PLANT A6 NEWPORT	315
NAVSTA NEWPORT RI: REPL STEAM DISTRIBUTRION PIPING BLDG 11	65
NAVSTA NEWPORT RI: REPL STEAM DISTRIBUTRION PIPING BLDG 15 TO 13	150
NAVSTA NEWPORT RI: REPL STEAM DISTRIBUTRION PIPING NUWC LOWER RD	350
NAVSTA NEWPORT RI: REPLACE 2 EXPANSION JOINTS STEAM DISTRIB	15
NCBC GULFPORT: ENERGY- INTERIOR LED UPGRAGES MULTIPLE BUILDINGS	995
NSA ANDERSEN : NSA ANDERSEN, DHW AIR TO WATER HEAT PUMPS, 2 BEQ BUILDINGS	840
NSA ANDERSEN : NSA ANDERSEN; ENERGY EFFICIENT ENTRANCE LIGHTING 78 BLDGS	724
NSA ANDERSEN : NSA ANDERSEN GUAM; FACILITY ENERGY IMPROVEMENTS; 26 BLDGS	1,340
NSA ANDERSEN : NSA ANDERSEN GUAM; FACILITY ENERGY IMPROVEMENTS 5 BUILDINGS & VENDING MACHINE CONTROLS	1,008
NSA ANDERSEN : NSA ANDERSEN GUAM; FACILITY ENERGY IMPROVEMENTS; 7 BLDGS	1,092
NSA ANDERSEN : NSA ANDERSEN UPGRADE ENERGY EFFICIENT LIGHTING, MULT BLDGS	7,157
NSA ANNAPOLIS MD: ENERGY: REPAIR HVAC SYSTEM, HALSEY FIELD HOUSE	556
NSA ANNAPOLIS MD: UPGRADE VARIOUS BUILDING LIGHTING SYSTEMS	1,940
NSA BETHESDA MD: E- RME FY15: ENERGY REPAIRS, BLDG 26, 50, 60, 61 RM13-0051)	1,819
NSA BETHESDA MD: BLDG 16 CHILLER 1A REPLACEMENT	2,500
NSA CRANE: B-1909 BOILER REPLACEMENT	109
NSA CRANE: B-3319 BOILER REPLACEMENT	131
NSA HAMPTON ROADS VA: ENERGY CONSERVATION IMPROVEMENTS HQ OPCON CENTER - NH 95	4,000
NSA HAMPTON ROADS VA: INSTALL CIP LINER AND REPLACE LATERALS - JFSC NORTH NSA NORFOLK	3,733
NSA HAMPTON ROADS VA: REPLACE ROOFS AT SDA 204,205,210,211	655
NSA MECHANICSBURG: ENERGY - HVAC ENERGY REPLACEMENT AND UPGRADE	4,650
NSA MECHANICSBURG: ENERGY- NSA MECH ENVELOPE UPGRADES BLDGS 14 AND 214	3,910
NSA MECHANICSBURG: ENERGY - REPLACE EXTERIOR LIGHTING WITH LED	1,216
NSA MECHANICSBURG: NSA MECH HVAC ENERGY REPLACEMENT AND UPGRADE RM12-3779	3,936
NSA MECHANICSBURG: NSA MECH BLDG 405 REPLACE SIDING WITH HIGHLY INSULATED METAL PANELING	143
NSA MECHANICSBURG: REPLACE FURNACES IN BUILDINGS 302, 403, REPAIR 301	1,415
NSA MECHANICSBURG: REPLACE CAFÉ HVAC SYSTEM	979

Project	Estimated Financial Obligation ($000s)
NSA MECHANICSBURG: REPLACE SIDING - BLDG. 410	1,159
NSA MECHANICSBURG: REPLACE BOILER, NOSC ERIE PA	1,040
NSA MECHANICSBURG: REF C4VZZT REPLACE (2) WATER HEATING TANKS @ BLDG 5 NSA-P SITE	326
NSA MECHANICSBURG: REPLACE ROOF ON BUILDING 608B	435
NSA MECHANICSBURG: BLDG 643 AT PNY REPLACE OVERHEAD DOORS, MOTORS AND CONLTRS, AND REPLACE WINDOWS	320
NSA MECHANICSBURG: BLDG 03 AT NSA P HVAC IMPROVEMENTS CAFETERIA	1,055
NSA MECHANICSBURG: REPLACE BOILER, NOSC ERIE PA	700
NSA MECHANICSBURG: BLDG 312 ROOF COATING / SEALING SYSTEM	435
NSA MECHANICSBURG: NDS P INSTALL CEILING MOUNTED FANS IN GYM BLDG 8	108
NSA MECHANICSBURG: BLDG 309 NSA M INSTALL NEW GAS FIRED BOILER	500
NSA MID SOUTH MILLINGTON TN: ENERGY - STREET LIGHTING UPGRADE TO LED FIXTURES	308
NSA MONTEREY CA: B330 INGERSOL HALL HVAC IMPROVEMENTS	1,480
NSA MONTEREY CA: B-339 FACILITY ENERGY IMPROVEMENTS AT DUDLEY KNOX LIBRARY	2,029
NSA MONTEREY CA: NSAM STEAM DISTRIBUTION REPAIRS AND INSULATION	2,836
NSA NAPLES IT: SRME RM14-2160 - HE STREET LIGHTING IMPROVEMENTS AT CAPO	301
NSA SOUDA BAY GR: B49 ENERGY IMPROVEMENTS	664
NSA SOUDA BAY GR: B56 ENERGY IMPROVEMENTS	856
NSA SOUDA BAY GR: LED T8 UPGRADES	314
NSA SOUDA BAY GR: B48 ENERGY IMPROVEMENTS	604
NSA SOUTH POTOMAC: DL FY15 HVAC & LIGHTING B117 & 411	417
NSA WASHINGTON: CENTAL BOILER PLANT MONITORING	3,875
NSF DIEGO GARCIA: REPLACE T12 LIGHTING RETROFIT UPH 2, 8, 12, 15, 17, 24, NGIS 12 & NGIS 27	325
NSF DIEGO GARCIA: REPLACE T12 LIGHTING RETROFIT UPH14, 23 & 25	88
NSF DIEGO GARCIA: REPLACE T12 LIGHTING RETROFIT NGIS 3, 4, 5 & 16	89
NSF DIEGO GARCIA: REPLACE T12 LIGHTING RETROFIT, UPH 1, 6, 9 & 13	205
NSS NORFOLK NAVAL SHIPYARD VA: REPAIR CIP NNSY WATERFRONT AREA (PHASE B)	585
NSS NORFOLK NAVAL SHIPYARD VA: REPAIR CIP WATER STREET SJCA	293
NSY BOS PORTSMOUTH: B153, ENERGY & BLDG REPAIR NUCLEAR MATERIAL INSPECTION	4,151
NSY BOS PORTSMOUTH: REPLACE STEAM DISTRIBUTION PIPING AT BERTH 6	462
Renewable Energy	**3,541**
JB PEARL HARBOR HICKAM HI: EXISTING PV SYSTEM RETROCOMMISSIONING	229
NAF MISAWA JA: 100KW SOLAR PV BUILDING 988	511
NAF MISAWA JA: INSTALL 135KW SOLAR - BUILDING 976 MISAWA	679
NAVSTA GUANTANAMO BAY CU: FY15_RME - SOLAR DOMESTIC HOT WATER FOR 5 FACILITIES	743
NAVSTA ROTA SP: ENERGY - SOLAR PANELS POOL WATER BLDG 45	588

Project	Estimated Financial Obligation ($000s)
NSF DIEGO GARCIA: INSTALL 75KW PV SOLAR UPH 7	791
Water Conservation	**25,018**
CFA OKINAWA: CAMP SHILDS AND WB LOW FLOW FIXTURES 50 BUILDINGS	1,295
JOINT BASE ANACOSTIA BOLLING: FY15 ENERGY PLUMBING UPGRADES TO VARIOUS BLDGS, JBAB	344
NAVAL BASE KITSAP: ENERGY-WATER CONSERVATION	1,003
NAVAL BASE KITSAP: (B2YR8Y) ENERGY - WATER FIXTURE RETROFITS, BANGOR	2,347
NAVAL BASE KITSAP: (B2YR95) ENERGY - RETROFIT WATER FIXTURES, PSNS	1,965
NAVAL BASE VENTURA COUNTY: FY15 RM-E RM13-0132, WATER FIXTURE UPGRADE, SNI	1,041
NAVBASE GUAM: REPAIR SEWER LINE INFILTRATION/INFLOW, NBG	5,348
NAVSTA NEWPORT RI: SEWER SYSTEM INFLOW & INFILTRATION REDUCTION	397
NAVSTA NEWPORT RI: REPAIR SEWER SYSTEM PH 3	1,823
NAVSTA NEWPORT RI: REPAIR WATER SERVICE NUWC AREA	3,300
NAVSTA NEWPORT RI: REPLACE WATER DISTRIB SYSTEM PIPING NUWC SERVICE AREA	3,245
NAVSTA NEWPORT RI: REPL GATE VALVE BLDG 68 LOAD	24
NAVSTA NEWPORT RI: REPL GATE VALVE SHIP LOAD PIER 2	150
NSA ANNAPOLIS MD: HIGH EFFICIENCY WATER CONSERVATION RETROFIT FOR VARIOUS BUILDINGS	591
NSA ANNAPOLIS MD: UPGRADE VARIOUS BUILDING WATER CONSUMING SYSTEMS	518
NSA BAHRAIN: WATER CONSERVATION FOR VARIOUS BLDGS AT NSA	359
NSA MECHANICSBURG: BLDG. 311A - REPLACE DOMESTIC WATER LINES & LATERAL SEWAGE LINES	435
NSA MECHANICSBURG: NSA P BLDG 2B 2D RENNOVATE MENS RESTROOM	325
NSA MECHANICSBURG: NSA P BLDG 36 RENNOVATE MENS/WOMENS RESTROOM	160
NSA SOUDA BAY GR: NON-POTABLE WATER IRRIGATION SYSTEM UPGRADE	348
USMC	**22,110**
Energy Conservation	**22,110**
MCAS CAMP PENDLETON: REPAIRS INOPERABLE PHOTOVOLTAIC SYSTEM, VARIOUS PACKAGE UNIT ECONOMIZERS, VARIOUS ROOFTOP PACKAGE UNITS, AND EXHAUST FANS.	351
MCAS CAMP PENDLETON: INSTALL MECHANICAL VARIABLE DIFFUSERS AND ADJUST DIFFUSERS.	15
MCAS CAMP PENDLETON: REPAIR BUILDING MANAGEMENT SYSTEM COMMUNICATION LINES TO BUILDING DIRECT DIGITAL CONTROLLERS.	241
MCAS CAMP PENDLETON: REPAIRS BY REPLACEMENT EXISTING NATURAL GAS AMI METER, VARIOUS BUILDING HVAC, AND ASSOCIATED DDC.	356
MCAS CAMP PENDLETON: INSTALLS NEW AMI ELECTRICAL METERS, LED LIGHTING, DDC COMPONENTS, AND OCCUPANCY SENSORS.	56
MCAS MIRAMAR: REPLACE EXISTING FLUORESCENT LIGHTING FIXTURES WITH ENERGY EFFICIENT DIMMABLE LED LUMINAIRES.	875
MCB CAMP BUTLER: RETROFIT/REPLACE EXISTING OLD AND INEFFICIENT MECHANICAL EQUIPMENT WITH MORE EFFICIENT OPTIONS.	716

Project	Estimated Financial Obligation ($000s)
MCB CAMP BUTLER: RETROFIT/REPLACE EXISTING OLD AND INEFFICIENT MECHANICAL EQUIPMENT WITH MORE EFFICIENT OPTIONS.	106
MCB CAMP BUTLER: RETROFIT/REPLACE EXISTING OLD AND INEFFICIENT MECHANICAL EQUIPMENT WITH MORE EFFICIENT OPTIONS.	281
MCB CAMP BUTLER: RETROFIT/REPLACE EXISTING OLD AND INEFFICIENT MECHANICAL EQUIPMENT WITH MORE EFFICIENT OPTIONS.	264
MCB CAMP BUTLER: RETROFIT/REPLACE EXISTING OLD AND INEFFICIENT MECHANICAL EQUIPMENT WITH MORE EFFICIENT OPTIONS.	910
MCB CAMP BUTLER: THIS PROJECT REPLACES ALL THE EXISTING SINGLE & DOUBLE FACE EXIT SIGNS WITH LIGHT EMITTING CAPACITORS (LEC) EXIT SIGNS.	1,564
MCB CAMP PENDLETON: THIS PROJECT WILL REPAIR EXISTING DDC CONTROLS IN MULTIPLE BUILDINGS.	280
MCB CAMP PENDLETON: THIS PROJECT WILL CONNECT AND INTEGRATE DDC CONTROLS IN MULITPLE BUILDINGS.	1,849
MCB CAMP PENDLETON: THIS PROJECT WILL REPAIR EXISTING DDC CONTROLS IN MULTIPLE BUILDINGS.	32
MCB CAMP PENDLETON: THIS PROJECT WILL REPAIR EXISTING DDC CONTROLS IN MULTIPLE BUILDINGS.	1,362
MCB CAMP PENDLETON: THIS PROJECT WILL REPAIR EXISTING DDC CONTROLS IN MULTIPLE BUILDINGS.	57
MCB CAMP PENDLETON: REPLACE BOILER IN BUILDING 210628 THAT HAS EXCEEDED ITS USEFUL LIFE.	1,000
MCB HAWAII: THIS PROJECT WILL MODIFY THE DUCTWORK ASSOCIATED WITH PAC-2 AT BLDG. 6003.	48
MCLB ALBANY: REPAIR NATURAL GAS DISTRIBUTION MAIN SERVING THE CENTRAL SECTION OF BASE.	3,850
MCLB ALBANY: REPAIR NATURAL GAS DISTRIBUTION MAIN SERVING THE CENTRAL SECTION OF BASE.	1,930
MCLB ALBANY: REPAIR NATURAL GAS DISTRIBUTION MAIN SERVING THE CENTRAL SECTION OF BASE.	2,213
MCMWTC BRIDGEPORT: THE PROJECT WILL REPLACE LIGHTING, EXISTING GARAGE DOORS WITH INSULATED UNITS, AND ALL THERMOSTATS WITH PROGRAMMABLE TYPE THERMOSTATS.	121
MCMWTC BRIDGEPORT: THE PROJECT WILL REPLACE LIGHTING, EXISTING GARAGE DOORS WITH INSULATED UNITS, AND ALL THERMOSTATS WITH PROGRAMMABLE TYPE THERMOSTATS.	99
MCMWTC BRIDGEPORT: THE PROJECT WILL REPLACE LIGHTING, EXISTING GARAGE DOORS WITH INSULATED UNITS, AND ALL THERMOSTATS WITH PROGRAMMABLE TYPE THERMOSTATS.	110
MCMWTC BRIDGEPORT: THE PROJECT WILL REPLACE LIGHTING, EXISTING GARAGE DOORS WITH INSULATED UNITS, AND ALL THERMOSTATS WITH PROGRAMMABLE TYPE THERMOSTATS.	57
MCMWTC BRIDGEPORT: THE PROJECT WILL REPLACE LIGHTING, EXISTING GARAGE DOORS WITH INSULATED UNITS, AND ALL THERMOSTATS WITH PROGRAMMABLE TYPE THERMOSTATS.	57

Project	Estimated Financial Obligation ($000s)
MCMWTC BRIDGEPORT: THE PROJECT WILL REPLACE LIGHTING, EXISTING GARAGE DOORS WITH INSULATED UNITS, AND ALL THERMOSTATS WITH PROGRAMMABLE TYPE THERMOSTATS.	242
MCMWTC BRIDGEPORT: THE PROJECT WILL REPLACE LIGHTING, EXISTING GARAGE DOORS WITH INSULATED UNITS, AND ALL THERMOSTATS WITH PROGRAMMABLE TYPE THERMOSTATS.	119
MCMWTC BRIDGEPORT: THE PROJECT WILL REPLACE LIGHTING, EXISTING GARAGE DOORS WITH INSULATED UNITS, AND ALL THERMOSTATS WITH PROGRAMMABLE TYPE THERMOSTATS.	227
MCMWTC BRIDGEPORT: THE PROJECT WILL REPLACE LIGHTING, EXISTING GARAGE DOORS WITH INSULATED UNITS, AND ALL THERMOSTATS WITH PROGRAMMABLE TYPE THERMOSTATS.	56
MCMWTC BRIDGEPORT: THE PROJECT WILL REPLACE LIGHTING, EXISTING GARAGE DOORS WITH INSULATED UNITS, AND ALL THERMOSTATS WITH PROGRAMMABLE TYPE THERMOSTATS.	40
MCMWTC BRIDGEPORT: THE PROJECT WILL REPLACE LIGHTING, EXISTING GARAGE DOORS WITH INSULATED UNITS, AND ALL THERMOSTATS WITH PROGRAMMABLE TYPE THERMOSTATS.	103
MCMWTC BRIDGEPORT: THE PROJECT WILL REPLACE LIGHTING, EXISTING GARAGE DOORS WITH INSULATED UNITS, AND ALL THERMOSTATS WITH PROGRAMMABLE TYPE THERMOSTATS.	47
MCSF BLOUNT ISLAND: THIS PROJECTS INCLUDES REPAIR BY REPLACEMENT OF TWO MULTI-ZONE AHUS WITH MORE EFFICIENT VAV UNITS.	393
MCSF BLOUNT ISLAND: THIS PROJECT INCLUDES INSTALLATION OF SOLAR INFLECTOR SHIELDS ON WINDOWS IN BUILDING 100.	133
MCSF BLOUNT ISLAND: THIS PROJECT INCLUDES INSTALLATION OF A SKYLIGHTS AND LIGHTING CONTROLS FOR DAYLIGHTING IN BUILDING 450.	518
MCSF BLOUNT ISLAND: THIS PROJECT INCLUDES INSTALLATION OF A SKYLIGHTS AND LIGHTING CONTROLS FOR DAYLIGHTING IN BUILDING 550.	144
MCSF BLOUNT ISLAND: THIS PROJECT INCLUDES THE REPAIR BY REPLACEMENT OF FAN TERMINAL UNITS WITH VAV TERMINAL UNITS IN BUILDING 100.	902
MCSF BLOUNT ISLAND: THIS PROJECT INCLUDES THE REPAIR BY REPLACEMENT OF FAN TERMINAL UNITS WITH VAV TERMINAL UNITS IN BUILDING 100.	266
MCSF BLOUNT ISLAND: INTEGRATED LIGHTING CONTROL FOR BUILDING 350 LIGHTING AND THE BMS SYSTEM FOR BUILDINGS 361 AND 454.	120
AIR FORCE	**106,361**
Energy Conservation	**91,454**
ABRAHAM LINCOLN CAPITAL AIRPORT: REPAIR BLDG 1 ENV	5,300
ABRAHAM LINCOLN CAPITAL AIRPORT: ENERGY: REPAIR EMCS & METERS	740
ABSTON ANG STATION: ENERGY: UPGRADE LIGHTING	120
AFCEC: ENERGY; AMRS LABOR SPT/DEPLOYMEN	2,500
ANDERSEN AIR FORCE BASE: UPGRADED EXTERIOR LIGHTING BASEWIDE	45
ANDREWS AIR FORCE BASE (113 FW): UPGRADE TO LED LIGHTING	91
ATLANTIC CITY INTERNATIONAL AIRPORT: BOILER DECENTRALIZATION & MULTIPLE ECMS	1,550

Project	Estimated Financial Obligation ($000s)
ATLANTIC CITY INTERNATIONAL AIRPORT: OCCUPANCY SENSORS	5
AVIANO AIR BASE: REPLACE A/C UNITS WITH HIGH EFFICIENCY UNITS, MULTI FACS	40
AVIANO AIR BASE: REPAIR HVAC CONTROLS, MULTI	366
AVIANO AIR BASE: REPAIR HVAC CONTROLS, MULTI	190
BANGOR INTERNATIONAL AIRPORT (ANG): ENERGY: REPAIR HEAT SYSTEMS	1,850
BANGOR INTERNATIONAL AIRPORT (ANG): CONVERT FROM OIL TO GAS B536, 505	100
BIRMINGHAM INTERNATIONAL AIRPORT: EOY: RPR BOILERS, B141/142	330
BUCKLEY ANG BASE: ENERGY: INSTALL INFRARED HEAT	1,200
BURLINGTON INTERNATIONAL AIRPORT (ANG): ENERGY: UPGRADE HIGH BAY LIGHT	130
CAMP BLANDING MILITARY RESERVATION (ANG): REPAIR HVAC BUILDING 4295	106
CAMP MURRAY ANG STATION: ENERGY: MULTIPLE CONS MEAS	570
CAMP PERRY ANG STATION: REPLACE 27 EXTERIOR HID STREET LIGHTS WITH LED	8
CANNON AIR FORCE BASE: NRG-INSTALL TREATED WW IRRIGATION SYSTEM	230
COLUMBUS AIR FORCE BASE: REPAIR HVAC, B440	497
COLUMBUS AIR FORCE BASE: CONSOLODATE LIBRARY/COMMUNITY SUPPPORT	225
COLUMBUS AIR FORCE BASE: RENOVATE B900 COMM OPS	1,028
COLUMBUS AIR FORCE BASE: REPAIR HVAC SYSTEMS NDI, B246	250
COLUMBUS AIR FORCE BASE: REPAIR HVAC TOWER/RAPCON	325
COLUMBUS AIR FORCE BASE: REPAIR HVAC PMEL, B327	462
COLUMBUS AIR FORCE BASE: REPAIR HVAC, B712 CHAPEL	1,684
COLUMBUS AIR FORCE BASE: REPAIR HVAC B1030	1,525
COLUMBUS AIR FORCE BASE: RENOVATE B820	1,300
CREECH AIR FORCE BASE: REPAIR WALL PACK LIGHTING MULTI FACILITIES	394
DANE COUNTY REGIONAL AIRPORT-TRUAX FIELD: PHASE 2 RETRO-COMMISH B406	160
DANE COUNTY REGIONAL AIRPORT-TRUAX FIELD: AIRFIELD TOWER LIGHTING	155
DANE COUNTY REGIONAL AIRPORT-TRUAX FIELD: BASE FACILITY EXTERIOR LIGHTING	80
DOBBINS AIR RESERVE BASE: REPAIR HVAC B945	525
DOBBINS AIR RESERVE BASE: EOY REPAIR HVAC B920	420
DOTHAN REGIONAL AIRPORT (ANG) STATION: ENERGY: UPGRADE LIGHTING	110
DULUTH INTERNATIONAL AIRPORT (ANG): UPGRADE INEFFICIENT RAMP LIGHTING TO HIGH EFFICIENCY LIGHTING	55
DULUTH INTERNATIONAL AIRPORT (ANG): UPGRADE INEFFICIENT LIGHTING AROUND BASE TO HIGH EFFICIENCY SYSTEMS	10
EDWARDS AIR FORCE BASE: RETROFIT LIGHTS MULTI BLDGS PH 1	4,500
EGLIN AIR FORCE BASE: REPLACE HVAC & LIGHTS AT BLDG 8640	3,850
EIELSON AIR FORCE BASE: UPGRADE INTERIOR LIGHTING SYSTEM IN BLDG. 3127 BUILDING TO LED W/CONTROLS	45
EIELSON AIR FORCE BASE: ENERGY CONS: REPLACE MOTORS AND INSTALL VFDS (MULTI)	889

Project	Estimated Financial Obligation ($000s)
ELMENDORF AIR FORCE BASE: UPGRADE INEFFICIENT LIGHTING AROUND BASE TO HIGH EFFICIENCY SYSTEMS	166
ELMENDORF AIR FORCE BASE: RE-CONNECT BLDGS 4309, 15437, 8515, AND 15364 TO BACS	45
ELMENDORF AIR FORCE BASE: REPAIR HVAC SYSTEMS MULTI FAC PHASE 3	519
ELMENDORF AIR FORCE BASE: REPAIR HVAC SYSTEMS MULTI FAC PHASE 4	1,067
ELMENDORF AIR FORCE BASE: REPAIR HVAC SYSTEMS MULTI FAC PHASE 5	1,467
ELMENDORF AIR FORCE BASE: REPAIR HVAC SYSTEMS MULTI FAC PHASE 6	325
ELMENDORF AIR FORCE BASE: REPAIR HVAC SYSTEMS MULTI FAC PHASE 7	859
ELMENDORF AIR FORCE BASE: CONSTRUCT EMCS CONNECTIONS 18 FACILITIES PHASE 2 JBER-R	3,048
FAIRCHILD AIR FORCE BASE: EOY RPR HVAC HANGAR B1037	125
FAIRCHILD AIR FORCE BASE: EOY RPR HVAC HANGAR B1029	125
FAIRCHILD AIR FORCE BASE: EOY HVAC B1033	125
FORT SMITH MUNICIPAL AIRPORT ANG: REPLACE BOILERS, BLDG 208 & 216	94
FRANCIS S GABRESKI AIRPORT (ANG): ROOFTOP AHU2 REPLACEMENT BLDG. 250	170
FT WORTH (CARSWELL): ENERGY: REPLACE BOILERS	300
FT WORTH (CARSWELL): REPLACE HVAC MXG GRP B1675	340
FT WORTH (CARSWELL): REPAIR HQ HVAC BLDG 1672	315
FT WORTH (CARSWELL): REPAIR HVAC BLDG. 1675	335
FT WORTH (CARSWELL): OCCUPANCY SENSOR INSTALLED, SOME HALLWAY FIXTURES DEACTIVATED	30
GENERAL WAYNE A. DOWNING PEORIA INTERNATIONAL AIRPORT (ANG): REPLACE INDUCTION WITH LED AND UPGRADE T8	132
GULFPORT-BILOXI REGIONAL AIRPORT (ANG): REPLACE 12 A/C UNITS	35
HANCOCK FIELD ANG: REPLACEMENT OF TWO BOILERS IN MEDICAL BUILDING	14
HARRISBURG IAP: REPLACE HIGH BAY HID WITH LED	120
HARRISBURG IAP: REPLACE HIGH BAY HID WITH LED AT THE PETROLEUM OPERATIONS BLDG. 68	10
HARRISBURG IAP: REPLACEMENT OF 44 URINAL FLUSHOMETERS	4
HARRISBURG IAP: REPLACE EXTERIOR HID WALLPACKS WITH LED	2
HARRISBURG IAP: REPLACE FLUORESCENT FIXTURES WITH LED TYPE TROFFER CONF. ROOM BLDG. 81	1
HARRISBURG IAP: REPAIR 3 EXTERIOR LIGHT PHOTOCELLS	$ -
HICKAM AIR FORCE BASE: ENERGY: UPGRADE LIGHTING	1,100
HICKAM AIR FORCE BASE: UPGRADED HVAC COMPONENTS MULTIPLE BUILDINGS	200
HICKAM AIR FORCE BASE: UPGRADED LIGHTING IN B3392 TO LED	90
HILL AIR FORCE BASE: NATURAL GAS METERING	251
HILL AIR FORCE BASE: STEAM METERING	405

Project	Estimated Financial Obligation ($000s)
HORSHAM AGS: DESTRATIFICATION FANS IN HANGAR 335	14
HULMAN REGIONAL AIRPORT: ENERGY: HVAC ECONOMIZER, B 38	280
INCERLIK AIR BASE ADANA: REPLACE EXTERIOR LIGHTING WITH NRG EFFICIENT, BASEWIDE PH-3	286
JACKSON INTERNATIONAL AIRPORT: REPLACE CHILLER, BLDG 126	105
JACKSONVILLE IAP ANG: ENERGY: UPGRADE HID LIGHTING	480
JACKSONVILLE IAP ANG: UPGRADE AIRCRAFT SHELTER LIGHTING	16
JB ANDREWS: REPLACING EXTERIOR LIGHTS WITH HIGH EFFICIENCY LED, BASEWIDE	1,250
KAHULUI COMMUNICATION STATION: ENERGY: UPGRADE LIGHTING	60
KALAELOA ANG: ENERGY: UPGRADE LIGHTING	100
KEAUKAHA MILITARY RESERVATION: ENERGY: UPGRADE LIGHTING	120
KIRTLAND AIR FORCE BASE: INSTALL LED STREET AND PARKING LOT LIGHTS	260
KIRTLAND AIR FORCE BASE: ENERGY: UPGRADE LIGHTING SYS	680
KLAMATH FALLS AIRPORT-KINGSLEY FIELD: UPGRADED LIGHTING IN B310 TO LED	3
KLAMATH FALLS AIRPORT-KINGSLEY FIELD: INSTALLED ADDITIONAL CONTROLS IN MULTIPLE BUILDINGS	1
KLAMATH FALLS AIRPORT-KINGSLEY FIELD: REMOVED HOT WATER BOILER FROM ENGINE SHOP	2
LANGLEY AIR FORCE BASE: REPAIR IR GAS HEATING CONTROL STRATEGY, MULTIPLE FACILITIES	239
LANGLEY AIR FORCE BASE: REPAIR CORROSION CONTROL HVAC AND CONTROLS, F.342	277
LAUGHLIN AIR FORCE BASE: ENER-UPGRADE EXTERIOR LIGHTING, BASEWIDE	911
LITTLE ROCK: THERMAL STORAGE	1,101
LOUISVILLE INTERNATIONAL AIRPORT - STANDIFORD FIELD: BUILDING 810 RENOVATION - AS WELL, TARGETS T12 FIXTURES (ENERGY ONLY)	6
LUIS MUNOZ MARIN INTERNATIONAL AIRPORT: EXTERIOR LIGHTING UPGRADE PHASE 1	35
LUIS MUNOZ MARIN INTERNATIONAL AIRPORT: EXTERIOR LIGHTING UPGRADE PHASE 2	37
MARCH AIR RESERVE BASE: REPLACED EXISTING BOILERS WITH TANKLESS HOT WATER HEATERS	20
MCCONNELL AIR FORCE BASE: PRQE142822 REPLACED STREET AND PARKING LOT LIGHTING.	159
MCGHEE TYSON AIRPORT: UPGRADE BASE EXTERIOR LIGHTING	710
MCGHEE TYSON AIRPORT: REPLACE INDOOR GAS HEATER (150 MBH OUTPUT)	2
MCGHEE TYSON AIRPORT: REPLACE HIGH PRESSURE SODIUM LIGHTS WITH T-5	5
MCGHEE TYSON AIRPORT: REPLACE 20 TON CONDENSER	40
MCGUIRE AIR FORCE BASE: REPLACEMENT LIGHTS	11
MCGUIRE AIR FORCE BASE: UPGRADE LIGHTING, B3369	67
MINNEAPOLIS ST PAUL INTL AIRPORT: INSTALL SOLAR FLIM ON SIMULATOR TRAINING FACILITY WINDOWS	9
MINOT AIR FORCE BASE: VARIABLE FREQUENCY DRIVES MULTIPLE FACILITIES	134

Project	Estimated Financial Obligation ($000s)
MISAWA AIR BASE: INST EMCS 8 BLDGS	1,775
MISAWA AIR BASE: HAS ENERGY IMPROVEMENTS, PH4	2,450
MISAWA AIR BASE: INST EMCS, HASS AND BOILER PLANT BLDG1337	1,636
MISAWA AIR BASE: INST FIBER FOR THREE TOWERS (NORTH SIDE)	390
MISAWA AIR BASE: INST FIBER LINES TO 7 PUMP HOUSES	818
MISAWA AIR BASE: INST EMCS CONTROLS TO FIBER LINES FOR 7 PUMP HOUSES	810
MISAWA AIR BASE: INST A/C CONTROL MUSTANG/STARFIGHTER COURT AND FULL CONTROL TO PUMP HOUSES	660
MISAWA AIR BASE: INST FIBER LINES FROM BLDGS 119,328, 822 TO 12	485
MISAWA AIR BASE: INST FIBER LINES FOR 8 BLDGS TO 1806	813
MOFFETT FLD ANG: EOY BASEWIDE HVAC REPAIR	400
MONTGOMERY REGIONAL AIRPORT (ANG) BASE: ENERGY: UPGRADE HID LIGHTING	280
MONTGOMERY REGIONAL AIRPORT (ANG) BASE: ENERGY: REPLACE CHILLER B1502	390
MONTGOMERY REGIONAL AIRPORT (ANG) BASE: EMERGENCY: REPAIR BOILER	80
MOODY AIR FORCE BASE: REPAIR BUILDING ENVELOPE, MULTIPLE FACILITIES	1,982
MOODY AIR FORCE BASE: REPLACE EXTERIOR LIGHTING BASEWIDE	3,600
MOUNTAIN HOME AIR FORCE BASE: REPLACE STREET LIGHTS W/LED	1,466
MOUNTAIN HOME AIR FORCE BASE: REPAIR ENVELOPE & LIGHTING UPGRADE FAC. 201	224
NASHVILLE INTERNATIONAL AIRPORT: REPLACE CHILLER, BLDG 801	96
NEW ORLEANS NAS ANG: HVAC SYSTEM REPLACEMENT, BLDG 41	165
NEW ORLEANS NAS ANG: REPLACE CHILLER HANGAR B5	540
NEW ORLEANS NAS ANG: EOY HVAC B265	160
NEW ORLEANS NAS ANG: EOY REPAIR HVAC O&T B24	250
NEW ORLEANS NAS ANG: EOY REPAIR HVAC B473	190
NEW ORLEANS NAS ANG: EOY REPAIR HVAC B149	108
NEW ORLEANS NAS ANG: EOY REPLACE HVAC B386	93
NIAGARA FALLS IAP-AIR RESERVE STATION: BOILER REPLACEMENT AND HVAC CONTROLS UPGRADE.	211
PETERSON AIR FORCE BASE: REPAIR HVAC, MULTIPLE FACILITIES	95
QUONSET STATE AIRPORT ANG: REPLACE LIGHTING BUILDING 2	62
RENO TAHOE INTERNATIONAL AIRPORT: PAINTED EXTERIOR WALLS AND ROOF OF THREE BUILDINGS WITH RADIANT BARRIER PAINT	220
RENO TAHOE INTERNATIONAL AIRPORT: ENERGY: RPR EXTERIOR LIGHTING	55
ROBINS AIR FORCE BASE: RPR/UPG PUMPS, WATER SUP TREATMENT, BLDG 174	221
ROSECRANS MEMORIAL AIRPORT: ENERGY: RPR EXTERIOR LIGHTING	352
SALT LAKE CITY INTERNATIONAL AIRPORT ANG: ENERGY: UPGRADE LIGHTING BASE	266
SAN DIEGO ANG STATION: REPLACED CHILLER	30
SCHENECTADY COUNTY AIRPORT ANG: ENERGY: DESTRAT FANS B7 & 8	73

Project	Estimated Financial Obligation ($000s)
SCHRIEVER AIR FORCE BASE: REPAIR BY REPLACING VAV CONTROLLERS 2ND-3RD FLR'S BLDG 300	115
SCHRIEVER AIR FORCE BASE: REPAIR BY REPLACING LIGHTS W/ LED, B600	150
SCHRIEVER AIR FORCE BASE: REPAIR BY REPLACING BOILERS, MULTI-FACILITIES	180
SCOTT AIR FORCE BASE: REPAIR DDC SYSTEMS - BASEWIDE	350
SEPULVEDA NATIONAL GUARD STATION: UPGRADED WALKWAY LIGHTING FROM INCANDESCENT TO LED	1
SEYMOUR JOHNSON AIR FORCE BASE: REPAIR HEAT PUMPS, AHU CONTROLS, AC, MULTIPLE BLDGS	148
SEYMOUR JOHNSON AIR FORCE BASE: REPAIR CHILLERS & BOILERS	199
SEYMOUR JOHNSON AIR FORCE BASE: REPAIR DDC CONTROLS, MULTI BLDGS	205
SIOUX GATEWAY AP/COL. BUD DAY FIELD(ANG): ENERGY: REPAIR DDC & HVAC	1,200
SPANGDAHLEM AIR BASE: INSTALL REVOLVING DOOR AND DE-STRATIFICATION FANS B520	292
SPANGDAHLEM AIR BASE: INSTALL VACANCY SENSORS MULTI-FACILITIES	4,800
SPANGDAHLEM AIR BASE: EMCS IN 53 BUILDINGS	116
TINKER AIR FORCE BASE: SUSTAIN REPAIR HVAC/UTILITIES, B/230, PH 2	70
TINKER AIR FORCE BASE: INSTALL PAINT HANGAR HEAT RECOVERY & CONTROLS	3,609
TUCSON INTERNATIONAL AIRPORT: ENERGY MULTI FAC LIGHTING	900
TULSA INTERNATIONAL AIRPORT: UPGRADE INTERIOR LIGHTING	290
TULSA INTERNATIONAL AIRPORT: UPGRADE EXTERIOR LIGHTING	150
USAF ACADEMY: REPLACE SHOWER HEADS	50
VANDENBERG: UPGRADE LIGHTING IN 80 BUILDINGS	2,965
VOLK FIELD: REPLACE/INSTALL EXTERIOR AREA LIGHTING WITH LED	10
W K KELLOGG AIRPORT: ENERGY: UPGRADE LIGHTS BOILERS	400
WRIGHT PATTERSON AIR FORCE BASE: UPGRADE LIGHTING - AREA B	493
WRIGHT PATTERSON AIR FORCE BASE: REPAIR FACILITIES - JUST DO IT ECM'S FROM ENERGY AUDIT	116
Renewable Energy	**5,309**
ANDREWS AIR FORCE BASE: SOLAR HEATING WALL TO HANGARS 2,3 AND 4	900
OFFUTT AIR FORCE BASE: GEOTHERMAL B-160, 499, 565, 803,809	2,869
VANDENBERG AIR FORCE BASE: GROUND MOUNTED PV	1,540
Water Conservation	**9,598**
GENERAL MITCHELL INTERNATIONAL APT (ANG): WATER MAIN LEAK/BREAK	18
AFMC LITTLE ROCK: REPLACE CONTROL VALVES 5 TANK	1,000
AFSPC LOS ANGELES: REPLACE IRRIGATION AND CONTROLS	840
MULTIPLE AFSPC: COMMAND WIDE IRRIGATION REDUCTION	7,451
SCHRIEVER AIR FORCE BASE: MAINTAIN BY REPLACING EXISTING BLUEGRASS WITH BUFFALOGRASS	289
DEFENSE AGENCIES	**3,713**
Energy Conservation	**3,713**

Project	Estimated Financial Obligation ($000s)
CAMP HENRY: IMPROVE LIGHTING	84
DEFENSE SUPPLY CENTER: REPLACE OFFICE FLUORSCENT LIGHTING WITH LED LIGHTS AND CONTROLS	1,805
DEFENSE SUPPLY CENTER RICHMOND: REPLACE 32F CHILLER (S)	158
DEFENSE SUPPLY CENTER RICHMOND: REPLACE BOILER - 31K (S)	202
DEFENSE SUPPLY CENTER RICHMOND: REPLACE AC IN WEIGHT ROOM 33D (S)	75
LIMESTONE: PROPANE CONVERSION	400
NAS SIGONELLA IT: INSTALL GLASS DOORS ON REFRIGERATED DISPLAY CASES	52
OSAN AIR BASE: IMPROVE LIGHTING	277
RAF LAKENHEATH: INSTALL GLASS DOORS ON REFRIGERATED DISPLAY CASES	194
SUSQUEHANNA: BUILDING 82 - INFIL OLD WINDOWS	15
SUSQUEHANNA: BUILDING 83 - INFIL OLD WINDOWS	15
SUSQUEHANNA: BUILDING 84 - INFIL OLD WINDOWS	15
SUSQUEHANNA: BUILDING 84 - REPLACE HVAC AND ENVELOPE REPAIRS	340
SUSQUEHANNA: BUILDING 79- REPLACE ROOF AND SIDING ADD INSULATION	22
SUSQUEHANNA: BUILDING 400 - HVAC REPAIRS	4
SUSQUEHANNA: BUILDING 149 - REPLACE FAILED HEATING SYSTEM	25
SUSQUEHANNA: BUILDING 2012 - REPAIR HVAC SYSTEM	30
GRAND TOTAL	**554,967**

LIST OF NON-GOVERNMENTAL THIRD PARTY FUNDED ENERGY PROJECTS

Project	Investment Value of ESPC/UESC ($000s)
ARMY	**204,768**
ESPC	**155,761**
ABERDEEN PROVING GROUNDS	239
CARLISLE BARRACKS	3,963
CORPUS CHRISTI ARMY DEPOT	26,078
FORT BLISS	4,518
FORT BLISS	13,158
FORT CARSON	6,623
FORT HAMILTON	17,049
FORT LEAVENWORTH	2,312
FORT LEAVENWORTH	837
FORT MCCOY	315
LETTERKENNY ARMY DEPOT	1,074
MCALESTER ARMY AMMUNITION PLANT	4,004
NATICK SOLDIER SYSTEMS CENTER	856
NATICK SOLDIER SYSTEMS CENTER	207
NATICK SOLDIER SYSTEMS CENTER	348
NATICK SOLDIER SYSTEMS CENTER	218
NATICK SOLDIER SYSTEMS CENTER	1,583
NATICK SOLDIER SYSTEMS CENTER	174
PUERTO RICO ARMY NATIONAL GUARD	50
RED RIVER ARMY DEPOT	238
ROCK ISAND JMTC FACILITIES	72
ROCK ISAND JMTC PROCESS	1,781
ROCK ISLAND ARSENAL GARRISON	22,416
ROCK ISLAND ARSENAL GARRISON	580
TOBYHANNA ARMY DEPOT	186
USAG BAUMHOLDER	9,710
USAG BAVARIA (HOHENFELS)	2,150
USAG DAEGU	919
USAG DAEGU	15,547
USAG FT GREELY	554
VIRGINIA ARNG	18,000
UESC	**49,007**
FORT CAMPBELL	5,025

Project	Investment Value of ESPC/UESC ($000s)
FORT CAMPBELL	2,283
FORT CAMPBELL	7,509
FORT CAMPBELL	540
FORT DETRICK	17,400
FORT HUNTER LIGGETT	3,546
JOINT BASE LEWIS-MCCHORD	2,726
REDSTONE ARSENAL	9,978
NAVY	**38,887**
ESPC	**33,664**
FRC SOUTHWEST	25,000
JB PEARL HARBOR HICKAM HI	8,664
UESC	**5,223**
JEB LITTLE CREEK FORT STORY VA	5,223
USMC	**28,700**
UESC	**28,700**
MCB CAMP LEJEUNE	28,700
AIR FORCE	**20,092**
ESPC	**911**
LAUGHLIN AFB	911
UESC	**19,181**
TINKER AFB	19,181
GRAND TOTAL	**292,447**

Appendix G - Contact Information

Please contact the following individuals with questions regarding the FY 2015 AEMR:

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